edizione in abbonamento
postale art. 2 comma 20 C
legge 662/96

QL
461
S672m
ENT

ISSN 0037-8747

MEMORIE DELLA SOCIETÀ ENTOMOLOGICA ITALIANA

SMITHSONIAN
AUG 12 2004
LIBRARIES

Volume 78 (1)
1999

Supplemento al Bollettino della Società Entomologica Italiana, 131 (3) (30.10.1999)

30 aprile 2000

SOCIETÀ ENTOMOLOGICA ITALIANA via Brigata Liguria 9 Genova

SOCIETÀ ENTOMOLOGICA ITALIANA

Sede in Genova, via Brigata Liguria, 9 presso il Museo Civico di Storia Naturale

CONSIGLIO DIRETTIVO 2000-2001

Presidente:	*Augusto Vigna Taglianti*
Vice Presidente:	*Mario E. Franciscolo*
Segretario:	*Roberto Poggi*
Amministratore:	*Giovanni Dellacasa*
Direttore delle Pubblicazioni:	*Riccardo Sciaky*
Consiglieri:	*Baccio Baccetti, Sebastiano Barbagallo, Claudio Canepari, Attilio Carapezza Achille Casale, Fabio Cassola, Mauro Daccordi, Giulio Gardini Giuseppe Osella, Fernando Pederzani Enrico Ratti, Stefano Zoia*
Revisori dei Conti:	*Enzo Bernabò, Enrico Gallo, Giuliano Lo Pinto,*
Revisori dei Conti supplenti:	*Ducezio Grasso, Sergio Riese*
Bibliotecario:	*Giulio Gardini*
Comitato di redazione:	*Achille Casale, Fabio Cassola, Mauro Daccordi, Mario E. Franciscolo, Roberto Poggi, Riccardo Sciaky, Augusto Vigna Taglianti, Stefano Zoia*
Segreteria di Redazione:	*Stefano Zoia*

CONSULENTI EDITORIALI

NILS MØLLER ANDERSEN (*København*) - PAOLO A. AUDISIO (*Roma*) - GEORGE E. BALL (*Edmonton*) - EMILIO BALLETTO (*Torino*) - MARCO A. BOLOGNA (*Roma*) - BARRY BOLTON (*London*) - PIETRO BRANDMAYR (*Cosenza*) - MARIO COLUZZI (*Roma*) - ROMANO DALLAI (*Siena*) - THIERRY DEUVE (*Paris*) - ALESSANDRO FOCARILE (*Medeglia*) - ERNST HEISS (*Innsbruck*) - MANFRED JÄCH (*Wien*) - MARCELLO LA GRECA (*Catania*) - VOLKER MAHNERT (*Genève*) - LUIGI MASUTTI (*Padova*) - ALESSANDRO MINELLI (*Padova*) - CLAS M. NAUMANN (*Bonn*) - LAZLO PAPP (*Budapest*) - SANDRO RUFFO (*Verona*) - VALERIO SBORDONI (*Roma*) - KONRAD THALER (*Innsbruck*) - STEFANO TURILLAZZI (*Firenze*) - S. BRADLEIGH VINSON (*College Station*) - JEFF F. WAAGE (*Ascot*) - ADRIANO ZANETTI (*Verona*) - ALBERTO ZILLI (*Roma*) - PETER ZWICK (*Schlitz*).

ISSN 0037 - 8747

MEMORIE DELLA SOCIETÀ ENTOMOLOGICA ITALIANA

Fondata nel 1869 - Eretta a Ente Morale con R. Decreto 28 Maggio 1936

Volume 78 (1)

1999 30 aprile 2000

REGISTRATO PRESSO IL TRIBUNALE DI GENOVA AL N. 76 (4 LUGLIO 1949)
Prof. Cesare Conci - Direttore Responsabile
Spedizione in Abbonamento Postale 50% - Quadrimestrale
Stampato da PolyGrafika, Via Ciro Menotti 11/D, 20129 Milano

SOCIETÀ ENTOMOLOGICA ITALIANA via Brigata Liguria 9 Genova

MEMORIE
SOCIETÀ ENTOMOLOGICA
Sede in Genova, via Brigata Liguria, 9 presso il Museo Civico di Storia Naturale
DELLA
SOCIETÀ
ENTOMOLOGICA
ITALIANA

Mem. Soc. entom. ital., 78 (1): 3-4. *30 aprile 2000*

Peter John MAZZOGLIO

Felice Musso (27.II.1914 - 13.VII.1999)

Riassunto - Viene qui ricordata la figura di Felice Musso, entomologo dilettante e primo dipendente dell'Istituto di Entomologia agraria dell'Università degli Studi di Torino.

Abstract - *Felice Musso (27.II.1914-13.VII.1999).*
The figure of Felice Musso, an amateur entomologist and the first employee of the Institute of agricultural Entomology of the University of Turin, is here recalled.

Entomologo e apicoltore dilettante e filatelico; la ricca collezione di francobolli a soggetto entomologico, andata purtroppo perduta, rappresentò il suo unico contributo pubblico in occasione del Simposio Internazionale dell'Apimondia su "Flora mellifera e impollinazione", tenutosi a Torino nel 1972[1], ripetuto nel Convegno su "Passato e Presente dell'Apicoltura Subalpina" tenutosi anch'esso a Torino dieci anni dopo.

Per l'entomologia torinese, con Felice Musso scompare anche il primo dipendente

[1] Vidano C., 1977 - Api e apicoltura nella filatelia internazionale - L'apicoltore moderno, 68(1): 15-19.

dell'Istituto di Entomologia agraria, fondato nel 1936 da Athos Goidanich. Infatti, Felice vi si trasferì dalla Clinica Medica Universitaria dell'Ospedale Molinette nel 1938 e, per molti anni, fu l'unico aiuto del direttore in campo e in Istituto.

Alternò l'impegno militare con il lavoro entomologico all'Istituto, partecipando alle ricerche sull'entomofauna del riso, della vite, sui cinipidi, sugli scolitidi e su vari insetti dannosi d'attualità.

Con lo scoppio della guerra fu impegnato come marconista a Torino, in Valle di Susa, in Francia e Liguria, quindi nella batteria contraerea a Leinì. Con l'armistizio entrò nella 10ª Brigata d'assalto Garibaldi "Piacibello" a Casalino di Mombello Monferrato in Val Cerrina. Anche in quest'altra veste servì la causa come staffetta per portare ordini in tutto il Piemonte.

Alla fine della guerra rientrò all'Università, aderì al movimento sindacale e fu fra i fondatori della CGIL dell'Università di Torino. Questo periodo, più tormentato, lo portò dalla Facoltà di Agraria a quella di Farmacia.

Il ritorno all'entomologia si ebbe nel 1970. Richiamato da Carlo Vidano, direttore dell'appena fondato Istituto di Apicoltura, lavorò con passione con le api fino al 1976, quando dovette essere pensionato per limiti di età, ma la sua presenza all'Istituto fu continua, anche in seguito. Sempre servizievole, non mancava di trascorrere giornate intere, svolgendo commissioni e lavoretti fino a pochi anni fa, quando la cecità lo privava del bene più prezioso.

Fu membro della Società Entomologica Italiana dal 1971 al 1998.

Indirizzo dell'Autore:

P. J. Mazzoglio, Di.Va.P.R.A. Entomologia e Zoologia applicate all'Ambiente "Carlo Vidano", via Leonardo da Vinci 44, I-10095 Grugliasco TO, Italia.

Mem. Soc. entom. ital., 78 (1): 5-70. *30 aprile 2000*

Luca TOLEDANO

Systematic notes on the palaearctic Bembidiini with particular reference to the fauna of China
(Coleoptera Carabidae)

Abstract - The systematics of species of the eastern palaearctic subgenera *Philochtemphanes* Netolitzky, 1942, and *Aureoplataphus* Netolitzky, 1942, is here reviewed. The subgenus *Josefia* **n. subg.**, with five new species, and the subgenus *Bembidromus* **n. subg.**, with one new species, are here described. Some taxa belonging to the subgenera *Ocydromus* s.l. and *Bembidion* are here described as new.

Many *Bembidion* species, mainly from the eastern palaearctic region, are discussed and arranged into known subgenera, in an attempt to reorganize in a modern way the great number of species previously not included in any subgenus. Brief discussions on the significance of some diagnostic characters for groups within the large subgenus *Ocydromus* s.l. are also given.

Some keys for the determination of subgenera, species groups and species, and some synonymic notes are also given.

The nomenclatorial acts proposed in this work are:

Taxa described as new (in systematic order):

B. (*Philochtemphanes*) *brancuccii* **n. sp.** (China); *B.* (*Philochtemphanes*) *daliangi* **n. sp.** (China); *B.* (*Bembidion*) *humerale petribulirschi* **n. ssp.** (Turkey); *B.* (*Josefia*) **n. subg.** (China); *B.* (*Josefia*) *belousovi* **n. sp.** (China); *B.* (*Josefia*) *luisae* **n. sp.** (China); *B.* (*Josefia*) *pieroi* **n. sp.** (China); *B.* (*Josefia*) *taguense* **n. sp.** (China); *B.* (*Josefia*) *shugela* **n. sp.** (China); *B.* (*Microsinocys*) *schuelkei* **n. sp.** (China); *B.* (*Bembidromus*) **n. subg.** (China); *B.* (*Bembidromus*) *panda* **n. sp.** (China); *B.* (*Aureoplataphus*) *jaechi* **n. sp.** (China); *B.* (*Ocydromus*) *schoenmanni* **n. sp.** (China); *B.* (*Ocydromus*) *radians puetzi* **n. ssp.** (China); *B.* (*Ocydromus*) *radians shaanxianum* **n. ssp.** (China); *B.* (*Ocydromus*) *moritai* **n. sp.** (China); *B.* (*Ocydromus*) *baehri* **n. sp.** (China); *B.* (*Ocydromus*) *echarouxi* **n. sp.** (China); *B.* (*Ocydromus*) *maddisoni* **n. sp.** (China); *B.* (*Ocydromus*) *roberti* **n. sp.** (China); *B.* (*Ocydromus*) *muellermotzfeldi* **n. sp.** (China).

Species transferred here to *Bembidion* subg. *Philochtemphanes* Netolitzky, 1942:

B. (*Emphanes*) *perditum* Netolitzky, 1920.

Species attributed here to *Bembidion* subg. *Ocydromus* Clairville, 1806:

B. radians Andrewes, 1922; *B. charon* Andrewes, 1926.

Species attributed here to *Bembidion* subg. *Peryphophila,* Netolitzky, 1942:

B. endymion Andrewes, 1935.

New synonymies:

B. tienmushaniense Kirschenhofer, 1984 = *B. perditum* Netolitzky, 1920 **n.syn.**; *B. nanpingense* Kirschenhofer, 1984 = *B. peleum* Jedlička, 1933 **n.syn.**; *B. niedli* Jedlička, 1965 = *B.* (*Ocydromus*) *yunnanum* Andrewes, 1923 **n.syn.**; *B. kinfushanum* Jedlička, 1958 = *B.* (*Ocydromus*) *hasurada* Andrewes, 1924 **n.syn.**; *B.* (*Pseudolimnaeum*) *jedlickanum* Toledano, 1999 = *B.* (*Pseudolimnaeum*) *arnosti* Nakane, 1978 **n.syn.**

Redescriptions:

B. (*Philochtemphanes*) Netolitzky, 1942; *B.* (*Philochtemphanes*) *exquisitum* Andrewes, 1923; *B.* (*Philochtemphanes*) *hansi* Jedlička, 1932; *B.* (*Philochtemphanes*) *perditum* Netolitzky, 1920; *B.* (*Aureoplataphus*) Netolitzky, 1942. *B.* (*Aureoplataphus*) *aureofuscum* Bates, 1883.

Riassunto - *Note sistematiche sui Bembidiini paleartici con particolare riferimento alla fauna di Cina (Coleoptera Carabidae)*

In questo lavoro vengono sottoposti a revisione i sottogeneri *Philochtemphanes* Netolitzky, 1942

ed *Aureoplataphus* Netolitzky, 1942 della regione paleartica orientale. Sono qui descritti il sottogenere *Josefia* **n. subg.** insieme con le sue cinque nuove specie, e il sottogenere *Bembidromus* **n. subg.** insieme con la sua unica specie. Vengono descritti qui anche altri nuovi taxa appartenenti ai sottogeneri *Ocydromus* e *Bembidion* s.str.

In questo lavoro vengono discusse molte specie di *Bembidion* principalmente della regione paleartica orientale inquadrandole in sottogeneri noti, nel tentativo di riorganizzare in un modo moderno la grande quantità di specie attualmente non attribuite ad alcun sottogenere; anche il grande sottogenere *Ocydromus* è trattato in questo lavoro con brevi discussioni sul significato di alcuni caratteri diagnostici.

Sono anche fornite chiavi per la determinazione di sottogeneri e specie, ed alcune note sinonimiche.

Gli atti nomenclatoriali introdotti in questo lavoro sono:

Nuovi taxa descritti (in ordine sistematico):

B. (*Philochtemphanes*) *brancuccii* **n. sp.** (Cina); *B.* (*Philochtemphanes*) *daliangi* **n. sp.** (Cina); *B.* (*Bembidion*) *humerale petribulirschi* **n. ssp.** (Turkey); *B.* (*Josefia*) **n. subg.** (Cina); *B.* (*Josefia*) *belousovi* **n. sp.** (Cina); *B.* (*Josefia*) *luisae* **n. sp.** (Cina); *B.* (*Josefia*) *pieroi* **n. sp.** (Cina); *B.* (*Josefia*) *taguense* **n. sp.** (Cina); *B.* (*Josefia*) *shugela* **n. sp.** (Cina); *B.* (*Microsinocys*) *schuelkei* **n. sp.** (Cina); *B.* (*Bembidromus*) **n. subg.** (Cina); *B.* (*Bembidromus*) *panda* **n. sp.** (Cina); *B.* (*Aureoplataphus*) *jaechi* **n. sp.** (Cina); *B.* (*Ocydromus*) *schoenmanni* **n. sp.** (Cina); *B.* (*Ocydromus*) *radians puetzi* **n. ssp.** (Cina); *B.* (*Ocydromus*) *radians shaanxianum* **n. ssp.** (Cina); *B.* (*Ocydromus*) *moritai* **n. sp.** (Cina); *B.* (*Ocydromus*) *baehri* **n. sp.** (Cina); *B.* (*Ocydromus*) *echarouxi* **n. sp.** (Cina); *B.* (*Ocydromus*) *maddisoni* **n. sp.** (Cina); *B.* (*Ocydromus*) *roberti* **n. sp.** (Cina); *B.* (*Ocydromus*) *muellermotzfeldi* **n. sp.** (Cina).

Specie trasferite qui a *Bembidion* subg. *Philochtemphanes* Netolitzky, 1942:

B. (*Emphanes*) *perditum* Netolitzky, 1920.

Specie attribuite a *Bembidion* subg. *Ocydromus* Clairville, 1806:

B. radians Andrewes, 1922; *B. charon* Andrewes, 1926.

Specie attribuite a *Bembidion* subg. *Peryphophila,* Netolitzky, 1942:

B. endymion Andrewes, 1935.

Nuove sinonimie:

B. tienmushaniense Kirschenhofer, 1984 = *B. perditum* Netolitzky, 1920 **n.syn.** ; *B. nanpingense* Kirschenhofer, 1984 = *B. peleum* Jedlička, 1933 **n.syn.**; *B. niedli* Jedlička, 1965 = *B.* (*Ocydromus*) *yunnanum* Andrewes, 1923 **n.syn.**; *B. kinfushanum* Jedlička, 1958 = *B.* (*Ocydromus*) *hasurada* Andrewes, 1924 **n.syn.**; *B.* (*Pseudolimnaeum*) *jedlickanum* Toledano, 1999 = *B.* (*Pseudolimnaeum*) *arnosti* Nakane, 1978 **n.syn.**

Ridescrizioni:

B. (*Philochtemphanes*) Netolitzky, 1942; *B.* (*Philochtemphanes*) *exquisitum* Andrewes, 1923; *B.* (*Philochtemphanes*) *hansi* Jedlička, 1932; *B.* (*Philochtemphanes*) *perditum* Netolitzky, 1920; *B.* (*Aureoplataphus*) Netolitzky, 1942. *B.* (*Aureoplataphus*) *aureofuscum* Bates, 1883.

Key words: Coleoptera, Carabidae, Bembidiini, *Bembidion*, *Philochtemphanes*, *Josefia, Bembidromus*, *Aureoplataphus,* palaearctic region, revision, taxonomy

MATERIALS AND METHODS

This paper is based on study of about 1000 specimens belonging to most palaearctic subgenera.

Sources of material are the collections of the following institutions and specialists:

BMNH The Natural History Museum, London
CB Coll. Baehr, München
CBL Coll. Bulirsch, Lovosice
CBr Coll. Brivio (P.I.M.E.), Monza

CE	Coll. Echaroux, Dourdan
CF	Coll. Facchini, Piacenza
CFk	Coll. Farkac, Praha
CM	Coll. Morita, Tokyo
CMa	Coll. Magnani, Cesena
CMb	Coll. Marggi, Bern
CMk	Coll. Morvan, Karentoir
CN	Coll. Neri, Forlì
CP	Coll. Pavesi, Milano
CPz	Coll. Pütz, Eisenhüttenstadt
CS	Coll. Schmidt, Milano
CSc	Coll. Sciaky, Rostock
CSk	Coll. Schülke, Berlin
CT	Coll. Toledano, Verona
CW	Coll. Wrase, Berlin
NMB	Naturhistorisches Museum, Basel
NMP	Narodni Muzeum, Praha
NMW	Naturhistorisches Museum, Wien
UZMK	Universitetes Zoologiske Museum, København
ZSM	Zoologische Staatssammlung, München

The measurements, made with a Leica MZ12 stereobinocular microscope at 25 x (body) and 100 x (median lobes of aedeagi), are expressed in the text by these abbreviations:

pw/pl	pronotum width / pronotum length ratio
pw/hw	pronotum width / head width ratio
el/ew	elytral length / elytral width ratio
ew/pw	elytral width / pronotum width ratio

The body length has been measured from front margin of clypeus to the apex of elytra, and the antennal length from base of the antennomere 1 to the apex of 11.

The dissections were made using standard techniques; genitalia and small parts were preserved in Euparal, on acetate labels fixed on the same pins as the specimens.

The pictures were taken with a Nikon F90x camera on a Leica MZ12 stereobinocular microscope; the drawings were made with a drawing tube on the same microscope, scanned and processed with the Color-it!2.3™ program on a Macintosh Performa 6400 computer.

In the descriptions of the median lobes of aedeagi, the definitions of Belousov & Sokolov (1996) are used for the sclerites; the simplified definitions of Toledano (1998, 1999) are used only for the subg. *Philochtemphanes*.

Introduction

For oriental Bembidiini the supraspecific classification is often problematic: many oriental species are intermediate between subgenera that in the western palaearctic region are easy to separate from each other. The impossibility to include them with certainty in these subgenera sometimes led to the description of new subgenera for few species. However, in most cases the uncertain systematic position of the oriental species suggests that the validity of some subgenera should be re-examined.

Andrewes (1921, 1922a, 1922b, 1923, 1924, 1927, 1930, 1932, 1935, 1936), descri-

bed hundreds of species from the Indian region, but never affirmed anything about their subgeneric placement. To simplify the identification he used groups of species without systematic importance, as the author himself admits (Andrewes 1935), based on characters which have only specific value.

To attribute the oriental species of *Bembidion* to subgenera, and reorganize the systematics of the groups, is a very long and difficult work. This task was begun by Müller-Motzfeld (1985, 1988, 1998), and is one of the aims of my research (Toledano & Sciaky, 1998; Toledano, 1999).

During the last few years I discovered that some Chinese species I was studying were undescribed. To demonstrate this, I had to compare them with most known taxa occurring in China and in the neighbouring regions (eastern Siberia, India, Central and South-Eastern Asia, Japan, North America). But to understand fully their systematic position is a work requiring a much longer time. As a first step to determining their relationship, I re-examined some supraspecific taxa, and found some characters suitable as supraspecific indicators. As a result, the placement of several species into subgenera became clear.

After this reexamination of the fauna, some small oriental subgenera became larger. For example, the subg. *Philochtemphanes* Netolitzky, 1942, here revised, formerly included only two species; it now includes five species. The subgenus *Aureoplataphus* Netolitzky, 1942, here revised as well, was described as monotypic, and now includes two species.

For one group of new species very strictly related to each other, I describe a new subgenus, *Josefia* n. subg.; *Bembidromus* n. subg., is described for a single species, very isolated, showing very interesting diagnostic characters.

Before dealing with the individual species that will be the subject of this work, some historical notes about the different arrrangements used in the past in the supraspecific systematics of the Bembidiini must be given, in particular regarding the limits of the genus *Bembidion*.

Netolitzky (1942-43), Lindroth (1963, 1976, 1980), Erwin & Kavanaugh (1981), Müller-Motzfeld (1985, 1986a, 1986b, 1998), Maddison (1993) dealt with *Bembidion* as a very large genus, including almost all the species of Bembidiini. Maddison (1993) correctly explained the reasons to keep as independent genera *Asaphidion* Gozis, 1886, *Phrypeus* Casey, 1924, *Bembidarenas* Erwin, 1972 and *Zecillenus* Lindroth, 1980. In my opinion a few more supraspecific taxa are valid as genera:

Ocys Stephens, 1829 (fusion of mentum and submentum, separated by a suture in the rest of the Bembidiini) (Vigna Taglianti, 1993, 1994; Kryzhanovskij et al., 1995);

Amerizus Chaudoir, 1868 (habitus similar to *Trechini* and very long mandibles) including species from North America (subg. *Amerizus*) and from Nepal and southwestern China (subg. *Tiruka* Andrewes, 1935) (Perrault, 1981, 1985; Deuve, 1998);

Orzolina Machado, 1987 from Canary Islands (peculiar chaetotaxy, geographically isolated, apterous, intertidal, containing a single species);

Caecidium Uéno, 1971 (blind, depigmented Japanese Bembidiini with habitus extremely similar to *Trechini* and elytra with a transverse furrow in addition to basal peduncle).

Perhaps *Pseudophilochtus* Wollaston, 1877 and *Endosomatium* Wollaston, 1877 from St. Helena, because of the extreme geographical isolation, could be interpreted as belonging to an independent genus. However, as I have examined only the external habitus of a

few species, which are very peculiar in having extremely rounded elytra, I cannot say yet if a generic separation could be acceptable.

One interesting diagnostic character of *Pseudophilochtus*, the absence of the hind pronotal seta, is shared also by several species from New Zealand (Lindroth 1976) and by the chinese *B.* (*Bembidion*) *sciakyi* Toledano, 1999: in my opinion this is another demonstration that the genus *Bembidion* is extremely variable and, therefore, characters that in a relatively restricted geographical area seem to be valid for generic or subgeneric diagnosis, in the examination of the world fauna can loose their supraspecific importance.

Nevertheless most species of the world Bembidiini, more than a thousand, in my opinion belong to *Bembidion* Latreille, 1802, since the species included in the independent genera mentioned above are few.

Revision of *Bembidion* subg. *Philochtemphanes* Netolitzky, 1942

Systematic notes. Before I deal with the species of *Philochtemphanes* Netolitzky, 1942, a reevaluation of some characters important for the diagnosis of the subgenus is in order.

In the opinion of most specialists the Bembidiini are divided into two large groups by the position of the discal elytral pores. According to some authors (e.g. Perrault 1981) this character has a generic value, and it separates, for example, the genus *Bembidion* from the genus *Ocydromus*. An interesting new way of observation of this character, suggested to me by my friend Maurizio Pavesi, can demonstrate that this is not a good generic character. Observing the elytral discal pores from the lower side of the elytron (diaphanized) shows that in most cases in which the discal pores appear to be in the third stria they are actually in the third interval. For example, in *Microsinocys* Toledano, 1998 the discal pore punctures appear from above to be in the third interval but near stria 3; as seen from beneath they are clearly in the third interval (figs. 1-2). Certainly most species of *Ocydromus* Clairville, 1806 sensu Kryzhanovskij et al. (1995) have the discal pores near the third elytral stria, sometimes exactly in the stria, whereas the species included by Jeannel (1941) in his phyletic lines of *Notaphus* Stephens, 1829 and *Bembidion* Latreille, 1802 have the discal elytral pores clearly in the third interval. Therefore, even though this character certainly has a taxonomical importance, and it can be useful for the subgeneric determination, in my opinion it does not have a generic value, being a very variable character also in series of specimens of the same species, collected at the same time and in the same place. For example, I have observed variation in the placement of the discal pores in *B.* (*Ocydromus*) *decorum* Zenker in Panzer, 1801. Therefore I believe that *Ocydromus* should not be accorded generic rank, and that most species of Bembidiini belong to the very large worldwide genus *Bembidion*, as mentioned above. Confirmation of this view may come from phylogenetic studies of other characters. For example, the examination of the karyotype (e.g. Serrano & Galian, 1996) seems to confirm the homogeneity of the genus, except for a few taxa, probably really representing independent genera. An example of the latter is *Synechostictus* Motschulsky, 1864, which also shows many interesting taxonomical characters, suggesting the same conclusion, in the male and female genitalia. In any case, *Philochtemphanes* certainly belongs to the group of subgenera with the discal pores of elytra in the third inter-

val, and it must be kept as subgenus of *Bembidion*, as Netolitzky (1942) himself did. For the same reason Andrewes (1935) included *B.exquisitum* Andrewes, 1923, in his group of *B.varium*, one of his species groups lacking systematic importance, as mentioned above.

Philochtemphanes was described by Netolitzky (1942) for *B. exquisitum* Andrewes, 1923, and *B. hansi* Jedlička, 1932. In his original description of the subgenus, the author notes the absence of the apical stria. As suggested by Andrewes (1935), in *B. exquisitum* the apical stria, even though clearly reduced, actually is always present. In any case, this character in itself has no supraspecific value: many species clearly not related to each other share this character: for example, *Bembidion* subg. *Omoperyphus*, *Bembidion* (*Ocydromus*) *cordicolle* Duval, 1851, many species of *Bembidion* subg. *Nepha*, *Bembidion* (*Josefia*) n. subg., *B. algidum* Andrewes, 1935, *B. misellum* Harold, 1877, etc. The presence of this character in species of the same subgenus can be due to a common derivation, but the presence in different phylogenetic groups does not necessarily suggest any close systematic relationship.

Another character used by Netolitzky (1942) in his original description of the subgenus is the presence of the "crista clavicularis" (fig. 3). The crista clavicularis is a sharp carina beginning from the end of the basal margin of the elytron, more or less extended in the direction of the articulation of the elytron. This is, in my opinion, an important character for the supraspecific diagnosis of this subgenus, of course in combination with some others, since it is not peculiar of this group. In fact it is present in some other subgenera with the discal elytral pores in the third interval, *Emphanes* Motschulsky, 1850, *Leja* Dejean, 1821, *Diplocampa* Bedel, 1896, *Bembidion* Latreille, 1802 s.str., *Philochtus* Stephens, 1829, subgenera surely related to each other, and in *Peryphophila* Netolitzky, 1942. But all these subgenera are clearly distinguishable from *Philochtemphanes*, as described in the following key.

KEY TO THE PALAEARCTIC SUBGENERA WITH CRISTA CLAVICULARIS

1 - Elytra markedly widened posteriorly, evidently wider than pronotum, with maximum width behind middle, pronotal median line extended to basal margin; base of pronotum rectilinear, sometimes with sides slightly oblique, never lobate; discal elytral pores in the third interval, adjoining stria 3; oriental species ..... *Peryphophila*

- Elytra not markedly widened posteriorly, more parallel and narrower; pronotum often with base lobate, with a median lobe more or less protruding behind; if base of pronotum not lobate, then with median line not reaching basal margin; discal elytral pores in the third interval, more distant from stria 3 2

2 - Frontal furrows very deep and strongly convergent ..... *Leja*

- Frontal furrows more superficial, not or only slightly convergent 3

3 - Fourth humeral umbilicate pore more distant from the third than the remainder are from each other 4

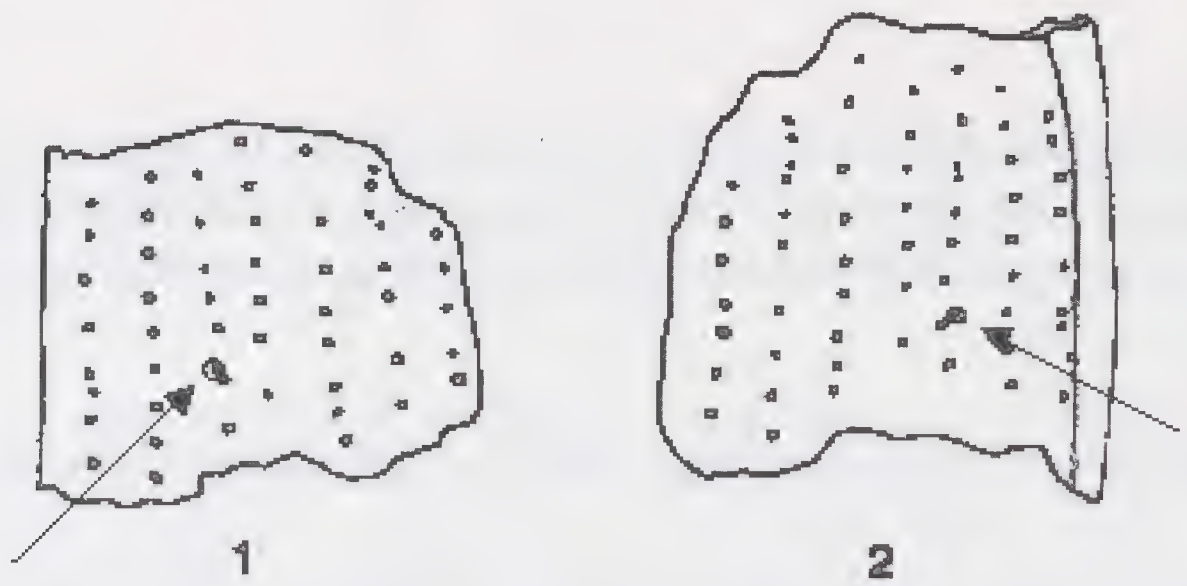
- Humeral umbilicate pores closely and regularly distributed 5

4 - Frontal furrows double ..... *Diplocampa*

- Frontal furrows simple ..... *Emphanes*

5 - Base of pronotum emarginate, with a median lobe posteriorly protruding; basal foveae almost absent 6

- Base of pronotum rectilinear, sometimes only slightly oblique at sides; basal foveae present, square and gloss; elytra piceous brown to black, with a more or less evident yellow apical spot in most



Figs. 1-2. Details of the anterior elytral discal pore of *Bembidion* (*Microsinocys*) *qinghaicum*: 1 - seen from above; 2 - seen from below. The channel of the discal pore is truncated-conical and slightly oblique; the center of its larger base (on the lower end) is more distant from stria 3 than the center of the smaller base (at the upper end of the channel), therefore in fig. 2 the discal pore is more distant from stria 3 than in fig.1. Fig. 3: "Crista clavicularis" of *Bembidion* (*Philoctemphanes*) *brancuccii* n. sp.

species . . . . . .*Philochtemphanes*

6 - Pronotum not cordate, transverse, with basal median lobe more or less strongly protruding behind; at the sides of the lobe margin rectilinear . . . . . .*Philochtus*

\- Pronotum strongly cordate, narrow, with very short emargination at the sides of the base, with hind angles sharp, less sharp if the hind seta is absent . . . . . .*Bembidion*

The male genitalia are rather similar in the different species of the subgenus *Philochtemphanes*, sharing the presence of two main sclerites in the median lobe of the aedeagus reminiscent of sclerites "a" and "b" of *Microsinocys* Toledano, 1998 and the similar sclerites "alpha" and "sigma" of *Bembidion* Latreille, 1802 (Toledano, 1999). In the descriptions of the species they will be called "sclerite a" and "sclerite b".

In addition to the species previously included in the subgenus, *B. perditum* Netolitzky, 1920 shows the combination of characters that in my opinion is peculiar for *Philochtemphanes*: discal elytral pores in the third interval, crista clavicularis present, four humeral umbilicate pores closely and regularly distributed, frontal furrows almost parallel and superficial, base of pronotum not (or very slightly) lobate: this species, originally described as belonging to the subg. *Emphanes,* is transferred here into *Philochtemphanes*.

Two more species of the subgenus are described here as new.

The study of the type material of *B.tienmushaniense* Kirschenhofer, 1984 (correct name for *B. tienmushaniensis* Kirschenhofer, 1984) revealed that this species is a junior synonym of *B. perditum*:

B. tienmushaniense Kirschenhofer, 1984 = *B. perditum* Netolitzky, 1920 **n.syn.**

In the main Collection of NMP I found a specimen of *B.* (*Philochtemphanes*) *exquisitum* Andrewes, 1923 labelled by Jedlička himself as type of an undescribed *B. andrewesi* (nec *B.* (*Peryphus*) *andrewesi* Jedlička, 1932), which probably represents nothing more than a "nomen in collectione".

Unfortunately, I could not examine the type material of two species, *Bembidion leptaleum* Andrewes, 1922 (from India) and *B. goetzi* Jedlička, 1965 (from China), that in my opinion could belong as well to *Philochtemphanes*. In Lorenz (1998) these species are dealt with as *B.* (*Neja*) *leptaleum* and *B.* (*Peryphanes*) *goetzi*.

In the provisional checklist of the chinese Bembidiini provided below I include the latter of these two species, but with doubt.

TYPE SPECIES. *Bembidion exquisitum* Andrewes, 1923

REDESCRIPTION. Small species (3.28 to 4.50 mm) piceous to brown, normally with one apical elytral spot at the posterior third of the elytral side, very faint in some specimens of *B. perditum* (Holotype), and in almost all the type specimens of *B. daliangi* n. sp. In the paratype of *B. daliangi* in coll. Farkac there is a light suggestion of elytral apical spots, even though very faint and with very shaded edges.

Head with almost parallel and superficial frontal furrows, normally developed eyes, rather convex, and antennae short.

Pronotum with rather large basal foveae impunctate; base very slightly sinuate at sides, but without a real median lobe protruding posteriorly. Anterior margin almost rectilinear, with anterior angles very slightly protruding from the margin. This character seems to be rather variable within the examined specimens. Lateral channel normally widened posteriorly. Laterobasal carina normally short, but well developed. Median line not deep, not reaching the basal margin. Base punctate in all species except *B. brancuccii* n. sp.

Metasternal process distinctly bordered. Legs rather short.

Elytra with rather marked shoulders. Presence of more or less developed crista clavicularis at the end of the basal margin. Striae finely punctate, ending before apex except for stria 1 and 2, normally reaching apex; intervals flat. Stria 7 absent in *B. hansi* and *B. brancuccii* n. sp. Stria 8 in the anterior third in the sulcus with four umbilicate humeral pores regularly and closely distributed, then separate from the sulcus, very deep, laterally surrounding a wide carina bounded in the inner side by the apical stria. Two discal pores in the third interval. Apical stria extremely reduced and superficial.

Male genitalia. In all species a pair of sclerites very similar to "sclerite a" and "sclerite b" of *Microsinocys* Toledano, 1998 and sclerites "alpha" and "sigma" of *Bembidion* Latreille, 1802 (Toledano, 1999) is present. Three apical setae in both parameres.

Female genitalia. Spermatheca (fig.43) without annulus receptaculi and with reser-

voir relatively large, elongate, divided in two cavities, the basal one, larger, "bean shaped", connected at the basal extremity to the duct by a small "funnel-shaped" channel and at the apical extremity with the second cavity, smaller, almost cylindrical. Large linear spermathecal gland.

DISTRIBUTION (fig. 4). The species of the subgenus inhabit the south-eastern palaearctic region from northern India to southwestern China (Yunnan, Sichuan, Shaanxi) where they seem to prefer habitats at relatively high altitude, from about 2000 to 4000 m.

BIOGEOGRAPHICAL CONSIDERATIONS. The fauna of Yunnan shows many elements in common with the south-eastern asian region and northern India, as shown by the distribution of *B. exquisitum* Andrewes, 1923. But the high endemism rate in the SW China shown by many groups of Bembidiini (Deuve, 1998; Toledano, 1998, 1999; Toledano & Sciaky, 1998) and other *Carabidae* (Sciaky, 1993, 1994; Sciaky & Facchini, 1997, 1999) and also by *B.* (*Philochtemphanes*) *hansi* Jedlička, 1932, is confirmed and emphasized by the new taxa described here.

KEY TO SPECIES

1 - Elytra with more or less evident microsculpture in fine, transverse meshes, at least near apex; apical elytral spots clearly visible, with rather sharp edges; if elytral spots faint, then dark elytra with evident elytral microsculpture; pronotum very slightly sinuate before hind angles (figs. 11, 12, 13) 2
- Elytra without microsculpture; if faint elytral microsculpture then isodiametric; apical elytral spots absent or very hardly visible; pronotum more evidently sinuate before the hind angles (figs. 14, 15, 16, 17) 4
2 - Microsculpture between eyes very superficial or absent; elytra more deeply punctate; stria 7 present (Northern India; Nepal; China: Sichuan, Yunnan) . . . . . .*B. exquisitum* Andrewes, 1923
- Microsculpture between eyes isodiametric, very evident; elytra less deeply punctate; stria 7 absent (China: Yunnan, Sichuan) 3
3 - Smaller (3.46 to 4.22 mm), base of antennae red (at least antennomere 1), rest of antennae brown; legs red; pronotum without evident microsculpture on disk and with punctured base; elytra rather glossy, reddish brown to dark brown with lighter apex and with striae well impressed (China: Yunnan, Sichuan) . . . . . .*B. hansi* Jedlička, 1932
- Larger (4.40 to 4.50 mm), first antennomere brown, rest of antennae darker; legs dark brown; pronotum with faint microsculpture on disk and with base rugose, not punctate; elytra matt, piceous, with striae more superficial (China: Yunnan) . . . . . .*B. brancuccii* n. sp.
4 - Pronotum more transverse (pw/pl > 1.40) (fig.17), elytra shorter (China: Sichuan, Yunnan, Shaanxi); apical elytral spot absent, only in one specimen very faint, small . . . . . .*B. daliangi* n. sp.
- Pronotum less transverse (pw/pl < 1.31) (figs. 14, 15, 16), elytra more elongate; large apical elytral spot, triangular, sometimes very faint (China: Kiautschau, Zhejiang, Shaanxi) . . . . . .*B. perditum* Netolitzky, 1920

B. (*Philochtemphanes*) *exquisitum* Andrewes, 1923 (fig. 5)

Bembidion exquisitum Andrewes, 1923

TYPE LOCALITY. India, W. Almora Div., Kumaon, Uttar Pradesh.

EXAMINED MATERIAL. Holotype, ♀, "W. Almora Div., Kumaon U. P., Oct. '19 H. G. C." (BMNH),

1♀, Paratype, "W. Almora Diva, Kumaon U.P., May 1917 NGC." (BMNH); 1♂, Tatsienlu, Prov. Setschwan, China Merid. (BMNH); 5♂♂, 4♀♀, China, Sichuan, Dayi Dafeishui forest, cca 110 km W of Chengdu, 22.6.1993 (CT, CS); 3♀♀, China - Sichuan, Mt. Emei, 3100 m, 180 km S of Chengdu, 7 July 1993 (CT); 2♂♂, 6♀♀, China - W Sichuan, Emei Shan 2800 m, 25-31.VI.92 (CS, CT); 6♂♂, 4♀♀, China: Sichuan, Emeishan, 180 km SSW Chengdu, 1700 m, 22.6.1994 (NMW, CT); 1♂, 2♀♀, China / Sichuan, 103°20' E, 29°30 N, Mt. Emei, 500-1200 m, 4.-18.V.1989 (NMB); 1♀, China: Sichuan, Mt. Emei, 600-1050 m, 5.-19.5.1989 (NMB); 1♀, China, pr. Sichuan, Emei Mt., 2500 m, 4.-20.5.1989 (NMB); 1♀, China, pr. Sichuan, Emei mt. 2500 m, 4.-20.5.1989 (NMB); 1♂, China / Sichuan, 103.36 el/31nw, Quanxian 700 m, 20.V.1989 (NMB); 1♂, 3♀♀, China (C Sichuan), Qincheng Shan, NW Chengdu 650-700 m (leafy wood), 30°54' N, 103°33' E, 18.V.1997 (CW, CT); 1♂, China (C Sichuan), Qincheng Shan, NW Chengdu 1000-1200 m, 30°55' N, 103°35' E, 3.VI.1997 (CW); 1♀, China: Sichuan (2), Qincheng Shan, rückseite 650-700 m, 30°53'.56 N, 103°33'01 E, 18.5.1997 (CW); 1♀, China: Sichuan, Qincheng Shan, 65 km NW Chengdu, 103°33' E, 30°53' N,, 18.V./ 3.-4.VI 1997, 8 km W Taiping, 800-1000 m (CPz); 2♂♂, 2♀♀, China - S Sichuan, 27°45' N, 101°13' E, pass 20 km S Muli/Bowa, mixed forest, ca 3500 m (CT, CS); 2♂♂, China - Sichuan, Baoxing, 100 km N of Yaan, 12-14 July 1995 (CT); 1♂, China - S. Sichuan, Daliang Shan mts., 9.-11. VI. 1998, road Meigu - Leibo vill., pass 15 Km NE of Meigu, 28°26'N, 103.17'E (CT); 6♂♂, 2♀♀, China S. Sichuan, Daliang Shan mts., Zhaojue vill. env. pass Xichang - Meigu vill. 12.-14.VI.1998 (CT); 1♂, 1♀, China, S. Sichuan, 7.VII.1998, 27.38N, 102.48E, 10 km SW Butuo, cultural steppe (CT); 1♀, Szechwan mer., Mts. Kinfushan, 2000 m pr. flum. Sung-Kanho (labelled as type of *B. andrewesi* Jedlicka in litt. nec *B. andrewesi* Jedlicka, 1962) (NMP); 1♂, China: W Sichuan, Aba Tibet Aut. Pref. Weizhou Co., Quionglai Shan, Wolong Tal, 20 km WNW Dujia,gyan, 1100m; 31°05N, 103°26E. Schotter, Blüten, 14.VII.1999 (CW); 3♀♀, China, Yunnan prov., Gaoligongshan mts., 90 km W of Baoshan, 26-28.5.1995 (CS, CT); 1♂, China: NW Yunnan, Yulonxueshan NP near Baishui, ca 30 km N Lijang, 2800-3200 m, 7-11.7.1994 (NMW); 1♂, 1♀, China - Yunnan, 100 km W Kunming, Diaolin nat.res., 22.5-2.6.1993 (NMW, CT); 4♂♂, 7♀♀, Nepal, Hille, VI 1996 (CT, CS); 1♂, Yunnan, 2600-3100 m, 25°38' N, 100°09' E, Gangshan mts., 5-6/6/1993 (NMB); 1♂, China: N Yunnan, Dali, 1600 - 2000 m, 5.-8.VII.1990 (NMB); 2♂♂, 1♀, Yunnan, 2800-3000 m, 25°12' N, 100°24' E, Weibaoshan mts., 29-30/6.92 (NMB, CT).

DESCRIPTION. Length 3.28 to 4.22 mm. Head and pronotum piceous, elytra brown to piceous with lighter apex, with one rectangular yellow spot at the posterior fourth, extended from about stria 4 to the lateral margin. Sometimes some faint iridescence on pronotum and, more evident, on elytra. Legs reddish with femurs infuscated. Antennomeres 1 to 3 and the basal 3/4 of the antennomere 4 red, rest of antennae slightly darker.

Head with parallel frontal furrows not extending to the clypeus. Normally without microsculpture between the frontal sulci; in few specimens there is a very superficial microsculpture, almost invisible, as isodiametric meshes.

Pronotum (fig. 11) transverse (pw/pl = 1.30 to 1.42) with square and smooth basal foveae. Sides slightly sinuated, basal margin with median lobe posteriorly protruding. Base with few punctures. No evident microsculpture on the disk.

Legs rather short.

Elytra (el/ew = 1.50 to 1.55) (ew/pw = 1.44 to 1.46) rather convex, normally with maximum width slightly behind the middle. Square shoulders. Striae 1 to 2, sometimes 3 reaching the apex, punctate in the anterior 3/4 and sulcate in the posterior fourth. Striae 4 to 6 disappearing at the posterior third. Stria 7 present, visible in the anterior half. Intervals slightly convex and shiny. Apical stria not deep, with pore puncture at middle. Scutellar

Fig. 4. Map of China showing the distribution of chinese species of the subgenus *Philochtemphanes*: *B. exquisitum* (1), *B. hansi* (2), *B. brancuccii* (3), *B. perditum* (4) and *B. daliangi* (5).

striole rather long. Crista clavicularis short. Discal elytral pores clearly in the third interval, often the anterior one in a small fovea extended to the interval 3.

Elytral microsculpture of very fine transverse meshes, often superficial and present only near apex, sometimes visible on the whole elytra, but in this case hardly visible.

Male genitalia (fig. 31). Median lobe of the aedeagus slightly curved ventrally. Sclerite "a" wide, and sclerite "b" divided in three oblique strips, the median one wider than the others and longer than in *B. hansi*.

DISTRIBUTION (fig. 4). N India, Nepal, China: Yunnan, Sichuan.

AFFINITIES. Similar to *B. hansi* and *B. brancuccii* n. sp. in the general habitus, but more related to *B. perditum* and *B. daliangi* n. sp. as suggested by the external structure of the male genitalia; the structure of the inner sac is shared by all *Philochtemphanes*, with very slight specific differences.

B. (*Philochtemphanes*) *hansi* Jedlička, 1932 (fig. 6)

Bembidion hansi Jedlička, 1932

TYPE LOCALITY. China, Yunnan fou.

EXAMINED MATERIAL. 1♀, Holotype, "Yunnan fou" (NMP); 3♂♂, Paratypes, "Yunnan fou" (NMP, NMW); 1♀, Paratype, "Yunnan fou" (NMW); 2♂♂, China Prov. Yunnan, Vallis flumin. Soling-ho (NMP); 2♂♂, Vallis flumin. Soling-ho, Yun. (NMW); 1♂, 1♀, China, prov. Yunnan, Vallis flumin. Soling-ho (NMP); 2♂♂, 3♀♀, Yunnan, Xishan mts., 24°57' N, 102°38' E, 2300 m, 27/6/1993 (NMB,

CT); 1♀, Yunnan, Yulong mts., 27°01' N, 100°12' E, 24-26 May 1993 (NMB); 1♂, China - Yunnan, 28.5 - 9.6. 1994 Dali (CS); 1♂, China - Yunnan, 28.5.-9.6.1994 Dali (CS); 1♂, China - S. Sichuan, Daliang Shan mts., road Meigu - Leibo vill., pass 15 Km NE of Meigu, 28°25'N, 103.17'E, 9-11.6.1998 (CT); 2♀♀, China S. Sichuan, Daliang Shan mts., Zhaojue vill. env. pass Xichang - Meigu vill. 12.-14.VI.1998 (CT).

DESCRIPTION. Length 3.46 to 4.22 mm. Head and pronotum piceous black, elytra reddish brown to dark brown, rather matt, with lighter apex. Elytral spots as in *B. exquisitum*, but on average extended also on interval 4, and with edges less sharp than in *B. exquisitum*. Legs red. Antennomere 1 and 2and the base of antennomere 3 red, rest of antennae darker. In some specimens antennomere 2 is also dark.

Head with parallel frontal furrows not extending to the clypeus, with coarse microsculpture in isodiametric meshes on the whole front. Eyes slightly more convex than in *B. exquisitum*.

Pronotum (fig. 12) transverse (pw/pl = 1.41 to 1.47) almost identical to that of *B. exquisitum*, with square and smooth basal foveae. Sides slightly sinuated, basal margin with median lobe slightly less protruding posteriorly than in *B. exquisitum*. Base with few punctures. No evident microsculpture on the disk.

Legs rather short.

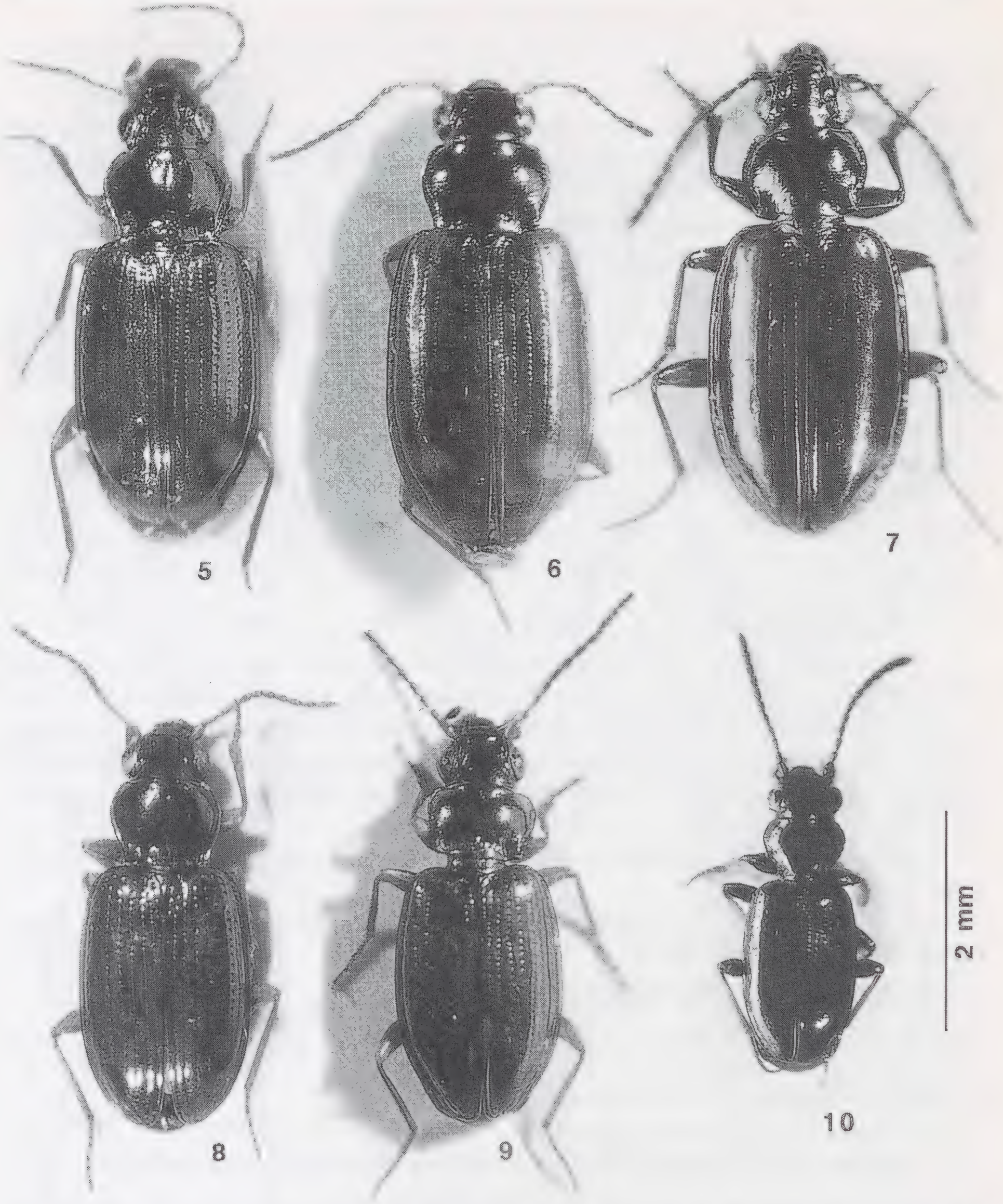
Elytra (el/ew = 1.52 to 1.54) (ew/pw = 1.50 to 1.58) with the same shape as in *B. exquisitum* but slightly less convex. Striae 1 to 3 reaching apex, sulcate in the apical fourth, punctate in the rest of the elytra. Striae 4 to 6 disappearing in the posterior fourth. Stria 7 absent. Intervals flat and matt. Crista clavicularis short. Discal elytral pores clearly in the interval 3, in a fovea extended on the whole interval 3, sometimes from interval 2 to 4.

Microsculpture in fine transverse meshes, slightly more evident than in *B. exquisitum*.

Male genitalia (fig.32). Median lobe of the aedeagus clearly wider from the apical third to the middle than at the base. Sclerite "a" rather narrow, and sclerite "b" divided in three oblique strips, the median one wider than the others. A small tooth at the apex, not sharp.

DISTRIBUTION (fig. 4). China: Yunnan, Sichuan.

AFFINITIES. Easy to recognize from *B. exquisitum* by the lighter and rather matt elytra, without elytral stria 7 and the coarse microsculpture in the front, between the eyes. It can be recognized from *B. brancuccii* n. sp. by the smaller size, the paler appendages, and the less developed elytral microsculpture. Closely related to *B. exquisitum* and *B. brancuccii* n. sp., but surely a sister species of the latter. The similarities with *B. brancuccii* n. sp. are stronger, by the structure of the elytral striae and by the presence of coarse microsculpture on the head. Also the examination of male genitalia reveals close systematic relationships between these species, sharing a structure of the median lobe of the aedeagus characterized by the maximum width of the lobe apical to the middle. Probably *B. brancuccii* n. sp. is derived from an isolated population near *B. hansi* with subsequent increase in the size of the body and male genitalia.



Figs. 5-10. Photographs of the habitus of: 5 - *B. exquisitum*, paratype; 6 - *B. hansi*, holotype; 7 - *B. brancuccii*, paratype; 8 - *B. perditum*, holotype; 9 - *B. daliangi*, holotype and 10 - *B. humerale petribulirschi,* holotype.

B. (Philochtemphanes) brancuccii n. sp. (fig. 7)

DIAGNOSIS. A *Philochtemphanes* larger than other species of the subgenus, very similar to *B. hansi* but characterized by almost completely dark antennae, pronotum microsculptured on the disk and matt elytra with reduced elytral striae.

TYPE LOCALITY. N Yunnan, 27°49' N, 99°43' E, cca 3600 m, Zhongdian.

TYPE SERIES: Holotype, ♂, "N Yunnan, 27°49' N, 99°43' E, cca 3600 m, Zhongdian, 19-25.VI.1994" (NMB). Paratypes: 1♂, 2♀♀, same date and locality as the Holotype (NMB, CT); 1♀, "Yunnan, 25 Km E of Zhongdian, 3300-4000 m, 12-14 Jul. 1995" (NMB).

DERIVATIO NOMINIS. Dedicated to Dr Michel Brancucci of the Naturhistorisches Museum, Basel, who kindly sent me the type material in study.

DESCRIPTION. Length 4.40 to 4.50 mm. Piceous black. The lighter paratypes have dark brown elytra with a faint yellow spot at the elytral base. Yellow apical spot very faint, from about interval 4 to the side. Legs piceous brown. Antennomere 1 and 2 dark brown, rest of antennae piceous.

Head with parallel frontal furrows not extending to the clypeus, more superficial than in *B. hansi*. Coarse isodiametric microsculpture on the whole front. Eyes as in *B. hansi*.

Pronotum (fig. 13) transverse (pw/pl = 1.39) with square and smooth basal foveae, sides slightly sinuated, basal margin with median lobe slightly protruding posteriorly as in *B. hansi*. Base rugose, without punctures. Rather superficial microsculpture in short, transverse meshes also on the disk,

Legs slightly longer than in *B. hansi*.

Elytra (el/ew = 1.50 to 1.53) (ew/pw = 1.55) as in *B. hansi*, but with more superficial striae, stria 1 to 3 reaching apex, sulcate in the apical fourth, punctate in the rest of the elytra. Striae 4 to 6 disappearing in the posterior fourth. Stria 7 absent. Intervals flat and matt. Crista clavicularis more developed than in *B. hansi*. Discal elytral pores clearly in interval 3, in a fovea extended across the whole interval 3, sometimes from interval 2 to 4, but more superficial than in *B. hansi*.

Microsculpture in fine transverse meshes, shorter and more evident than in the two precedingspecies.

Male genitalia (fig. 33). Median lobe of the aedeagus similar than in *B. hansi*, but clearly larger, and more parallel.

DISTRIBUTION (fig. 4). China: Yunnan.

AFFINITIES. See under *B. hansi*.

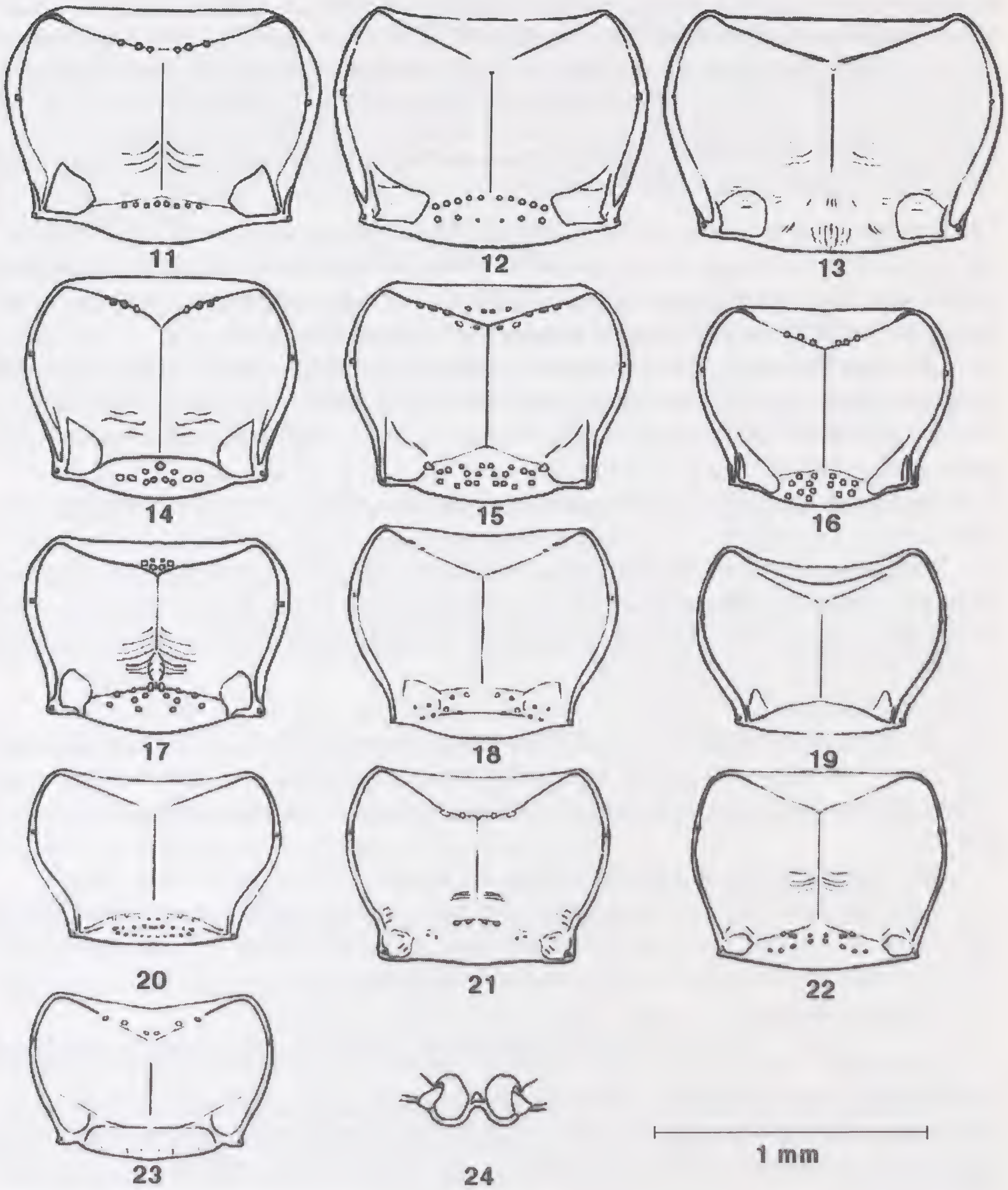
B. (*Philochtemphanes*) *perditum* Netolitzky, 1920 (fig. 8)

B. (*Emphanes*) *perditum* Netolitzky, 1920

Bembidion tienmushaniensis Kirschenhofer, 1984 (correct name *B. tienmushaniense*)

SYSTEMATIC NOTES. This species has been described as belonging to the subg. *Emphanes* Motschulsky, 1846 only because of the presence of the crista clavicularis, but the humeral elytral pores clearly are not in the characteristic position of the subg. *Emphanes*. Therefore it is transferred here into *Philochtemphanes*.

The pronotal shape is very variable in the examined specimens of *B. perditum*; the type specimen (fig. 14) shows less developed sinuosity of the lateral margin, while few specimens from Shaanxi (fig. 16) show the maximum development of this character. As shown in fig. 15, *B. tienmushaniense* has a degree of sinuosity of the lateral margin intermediate between the two forms shown in figs. 14 and 16. The comparison of the male genitalia reveals that all these forms belong to the same taxon.



Figs. 11-23. Pronotal shape of: 11 - *B. exquisitum*; 12 - *B. hansi*; 13 - *B. brancuccii*; 14 - *B. perditum*, holotype; 15 - *B. perditum* (holotype of B. *tienmushaniense*); 16 - *B. perditum*, extreme of sinuosity of the pronotal side; 17 - *B. daliangi*. 18 - *B. belousovi*; 19 - *B. pieroi*; 20 - *B. taguense*; 21 - *B. luisae*; 22 - *B. shugela*; 23 - B. *panda*. Fig. 24: metasternal process of *B. belousovi*.

TYPE LOCALITY. China: Kiautschau.

EXAMINED MATERIAL. 1♀, Holotype, "Kiautschau, China" (NMW); 1♂, Holotype of *B. tienmushaniense* Kirschenhofer, 1984, "China, Tien Mu Shan 30° 23'N, 119° 37' E, 16. VI. 1937, Eigin Suenson leg." (UZMK); 1♀, paratype of *B. tienmushaniense* Kirschenhofer, 1984, "China, Tien Mu Shan 30° 23'N, 119° 37' E, 30. V. 1937, Eigin Suenson leg." (NMW); 2♂♂, 1♀, "China, Shaanxi, Qing Ling Shan mts., road Baoji - Taibai vill., pass 35 km S of Baoji, 21-23. VI. 1998" (CT); 1♀, "China - Shaanxi - Qin Ling Shan 108°47'E, 33°51'N, Mountain W pass at Autoroute km 70, 47 Km S Xian, 2300 - 2500 m sifted, 26-30.08.1995" (CW).

DESCRIPTION. Length 3.52 to 3.96 mm. Piceous black, antennomere 1 and 2 and base of 3 and 4 red, rest of antennae darker (in the specimen in CW, rest of antennae very slightly infuscated). Legs reddish, with femurs slightly infuscated. Apical spot triangular, larger than in the other *Philochtemphanes*, even though with unsharp edges.

The type is teneral, thus its colour is completely reddish - brown, only with a faint suggestion of the apical spots. The type specimens of *B. tienmushaniense* I could observe are the same colour; in the paratype of *B. tienmushaniense* (NMW) the apical spots are slightly more evident.

Head with normally convex eyes, frontal furrows parallel, not deep, and front smooth, glossy.

Pronotum (fig. 14, 15, 16) (pw/pl = 1.17 to 1.31) more cordiform than in other *Philochtemphanes;* very variable in shape with the more or less sinuate lateral margins. Basal foveae smaller than in the preceding species. Median line not deep, basal transverse impression evident, base punctured.

Legs rather short.

Elytra rather elongate (el/ew = 1.47 to 1.60) (ew/pw = 1.52 to 1.62), almost parallel, with square shoulders. Striae 1 to 7 punctate, clearly impressed, stria 3 to 7 disappearing slightly before apex; crista clavicularis well developed. Scutellar striole rather long. Apical stria short.

No microsculpture on head, pronotum and elytra.

Male genitalia (fig. 34). Shape of the medium lobe of the aedeagus very similar to *B. daliangi* n. sp., slightly narrower than in the latter, and with sclerite "b" wider, ovate, and with a strongly sclerotized part at the basal end of sclerite "a".

DISTRIBUTION (fig. 4). China: Kiautschau, Zhejiang, Shaanxi.

AFFINITIES. Surely related to *B. daliangi* n. sp. and *B. exquisitum* as indicated by the structure of the male genitalia. It shares with *B. daliangi* n. sp. weak development of the apical spots, and absence of elytral microsculpture; this last in my opinion is an important diagnostic character within *Philochtemphanes*. Also the male genitalia are very similar in both species.

B. (Philochtemphanes) daliangi n. sp. (fig. 9)

DIAGNOSIS. A *Philochtemphanes* with short, unspotted (only a very faint spot, difficult to see, in a few specimens) elytra, with maximum width slightly behind the middle.

TYPE LOCALITY. China - S. Sichuan, Daliang Shan mts., road Meigu - Leibo vill., pass 15 Km NE of Meigu, 28°25'N, 103.17'E.

TYPE SERIES. Holotype, ♂, "China - S. Sichuan, Daliang Shan mts., road Meigu - Leibo vill., pass 15 Km NE of Meigu, 28°25'N, 103.17'E, 27.VII.1997" (CT); Paratypes: 1♂, same date and locality as the holotype (CT); 1♂, "China - S. Sichuan, 26. VII. 1998, 28°25'N, 103.17'E, road Meigu - Leibo, Daliang Shan mts., vill., pass 15 Km NE Meigu" (CT); 1♀, "China Songpan, N. Sichuan, 3.6.95 (CF); 1♂, "China, N Yunnan, Zhongdian env., 3200-3300 m 21.-22.VI.1998 27°50N, 99°36E (CFk); 1♂, "China, W.Sichuan (Ganzi Tibet. Aut. Pref. Yajiang Co.), Shalui Shan, river valley 6 km WSW Yajiang 3250 m, 30°01N/100°57E (river bank, bank slope), 4.VII.1999 (CW); 1♂, "CHINA (Shaanxi) Qin Ling Shan 110.06E, 34.25N, Hua Shan, 118 km E Xian, S. top, 1950 - 2000 m. mix. wood, 19.VIII.1995 (CW).

DERIVATIO NOMINIS. Derived from the type locality.

DESCRIPTION. Length 3.48 to 3.64. Brown to piceous-black, with greenish metallic reflections in a few paratypes, legs reddish with infuscated femurs. Antennomeres 1, 2 and base of 3, 4 red, rest of antennae darker. Elytra unspotted; in the paratype in Coll. Farkac a light suggestion of apical spots as in most species of *Philochtemphanes*, even though very faint and with very shaded edges.

Head with front smooth, glossy, with few transverse rugosities in few specimens.

Pronotum (fig. 17) cordate, small, more transverse than in the other species (pw/pl = 1.40 to 1.42). Median line strongly impressed, ending before the basal margin, with a small median elongate fovea at its posterior end, more evident than in the few specimens of the other species sharing this character. Laterobasal carina very short. Small and square basal foveae extending onto the basal margin, which is strongly uneven if seen from behind.

Legs short.

Elytra (el/ew = 1.50 to 1.52) rather short, with maximum width behind the middle and square shoulders. Stria 7 less impressed than the others. Striae disappearing very slightly before the apex. Scutellar striole rather long. Apical stria very short.

Microsculpture absent. In the paratype from Songpan in CF a very superficial isodiametric microsculpture is present on the elytral apex.

Male genitalia (fig. 35). Sclerite "b" sharp, clearly narrower than in *B. perditum*.

DISTRIBUTION (fig. 4). China: Sichuan, Yunnan, Shaanxi.

Bembidion subg. *Bembidion* s.str. Latreille, 1802

Bembidion (Bembidion) humerale petribulirschi n. ssp. (fig. 10)

In my revision of subgenus *Bembidion* (1999) I mentioned a female specimen of *B. humerale* with completely dark elytra collected in Turkey by my friend Dr. Petr Bulirsch. After examining some more specimens sharing the absence of elytral spots I could confirm that they belong to a new taxon.

The reasons that lead me now to describe this taxon as a new subspecies of *B. humerale* Sturm, 1825, are: first, all the specimens of *B. humerale* collected in Turkey I could examine at present share the absence of elytral spots; second, I have not found in the literature any mention of the typical form of *B. humerale* from there; third, only one completely black species of *Bembidion* s.str. is mentioned from Pülümur, Turkey, *B. quadrimaculatum cardiaderum* Solsky, 1874 (Korge, 1971), but I suspect that this mention could be

referred to *B. humerale petribulirschi* n. ssp., because also the typical form of *B. quadrimaculatum* Linné, 1761, is present in Turkey, and the geographical distribution of *B. quadrimaculatum cardiaderum* does not suggest its presence in Turkey (Toledano, 1999). Another reason is that in many cases in the subg. *Bembidion* geographically isolated populations share a darkening of the integument, with loss of the elytral spots.

DIAGNOSIS. A *B. humerale* from Turkey with completely dark elytra.

TYPE LOCALITY. Ulukisla, Anatolia (Turkey)

TYPE SERIES. Holotype, ♂, "Ulukisla, Anat., 28.VII.47, Exp. N. Mus. CSR" (CFk). Paratypes: 1♀, "Turkey (Antalya), Saklikent 1600-2100 m, 9/7/1998 Bey Daglari, leg. Bulirsch" (CBL); 1♂, Sivrihisar, Anat., 7.IX.47, Exp. N. Mus. CSR" (CT); 1♀, "Turkey, prov. Ordu, Koyulhisar, 29.5.1989, leg. Schönmann et Schillhammer" (NMW); 1♀, "TR K Maras, dint. Goksun, 12/V/1997, leg. Sama" (CN); 1♀, "TR K Maras, 13 km SGoksun, 12/V/1997, leg. Magnani" (CMa).

DERIVATIO NOMINIS. I dedicate this subspecies to my friend Dr. Petr Bulirsch of Lovosice who collected and kindly gave me for study the first specimen of this new taxon I could see.

DESCRIPTION. Length 2.64 to 2.88 mm. Piceous-black, antennomere 1 black, rest of antennae dark brown, slightly paler the apex of antennomere 11, femurs and base of tibiae dark, rest of legs yellow, palps dark brown. Elytra completely black.

Head rather small, with rather deep and almost parallel frontal furrows, extending to the clypeus, where they are slightly convergent; convex eyes, antennomeres rather short. Pronotum transverse (pw/pl = 1.23 to 1.32) slightly wider than head (pw/hw = 1.03 to 1.09).

Elytra rather elongate (el/ew = 1.60-1.63) and parallel, with well developed shoulders. Striae pointed, rather superficial, visible in the basal 5/6. Stria 1 pointed in the basal 2/3 and sulcate in the apical third.

Male and female genitalia identical to those of the nominotypical form.

DISTRIBUTION. Turkey. This is the southernmost occurrence of *B. humerale*.

AFFINITIES. This species lacks the apical tooth of the median lobe of the aedeagus. As judged by this character, *B. humerale* has a relatively independent position within the *Bembidion* sensu stricto: the lack of the tooth is shared only with *B. crassicorne* Putzeys, 1872, a species otherwise not strictly related to *B. humerale*. *B. humerale petribulirschi* is easy to recognize from some other taxa of the subgenus sharing the absence of elytral spots by the black antennomere 1, since *B. quadrimaculatum* ssp. *cardiaderum* Solsky, 1874 (Turkmenistan) and *B. quadrimaculatum* ssp. *caporiaccoi* Netolitzky, 1934 (N India) have always the base of the antennae more or less red, never black, while *B. quadripustulatum* Serville, 1821, always with at least antennomere 1 black and clearly larger in all its subspecies, present in the same region of *B. humerale* ssp. *petribulirschi*, never shows completely black elytra. The remaining palaearctic *Bembidion* species without elytral spots, *B. sciakyi* ssp. *luguense* Toledano, 1999 from China, sharing also the black first antennomere , is clearly distinguishable by the absence of the seta at the hind pronotal angle, and by the apical structure of the median lobe of the aedeagus.

My key to the palaearctic species and subspecies of subgenus *Bembidion* (Toledano, 1999) has to be slightly corrected by adding the new subspecies described here at couplet 9:

9 - Elytra completely dark (Turkey) . . . . . .*humerale petribulirschi* n. ssp.
- Elytra with at least one pale spot 10

Bembidion subg. **Josefia** n. subg.

DIAGNOSIS. A subgenus of *Bembidion* characterized by small size (3.26 to 4.40 mm), antennae moniliform, head with very superficial frontal furrows; pronotum depressed and cordate, distinctly sinuate at sides before the hind angles, with extremely superficial basal foveae; elytra ovate with striae more or less lightly punctured, discal pores in the third interval, near stria 3, and apical elytral pore isolated.

TYPE SPECIES. *Bembidion belousovi* herewith described.

DERIVATIO NOMINIS. The subgenus is dedicated to my friend Dr. Josef Jelinek of the Narodni Muzeum of Praha; the gender of the name is feminine.

DESCRIPTION. Small species (3.26 to 4.40 mm). Piceous-black with legs reddish to brown.

Head relatively large with normally convex eyes; antennae moniliform as in *Microsinocys* Toledano, 1998, antennomeres slightly more elongate only in *B. belousovi*. Frontal furrows superficial, not extending to the clypeus, rarely extending posteriad behind the middle of the eye, sometimes extremely reduced, almost absent.

Pronotum cordate, depressed, with sides more or less sinuate before the hind angles. Basal foveae extremely superficial, flat, with lateral carina more or less evident, never completely developed. Base of pronotum rectilinear, sometimes slightly sinuate at sides. Lateral anterior pore puncture about at the anterior third, posterior pore puncture at the corner of the hind angle.

Metasternal process (fig.24) with a large border, with a transverse furrow at the middle of the mesocoxae.

Legs rather short in all species.

Elytra strongly oval, with rounded humera. Elytral striae normally superficial, punctate. In one species (*B. pieroi* n. sp.) striae more deeply punctate, in *B. luisae* n. sp. and *B. shugelae* n. sp. striae punctate - sulcate. Only stria 1 reaching the apex, joining there the lateral sulcus. Stria 8 in the anterior third in the lateral sulcus, with four humeral pores closely and regularly distributed, then faint, but visible, sulcate, separate from the sulcus, ending in line with the apical pore, isolated by the absence of the apical stria. Scutellar striole short. Basal elytral margin ending with a small tooth between the beginning of striae 5 and 6 (at the beginning of stria 6 in *B. luisae* and *B. shugela*). Anterior discal elytral pore in the third interval, almost on stria 3, the posterior one slightly more distant from stria 3.

Male genitalia with a well-sclerotized ribbon brush, not large, in the median lobe of the aedeagus; in all the species except for *B. luisae* n. sp. a basal chitin platelet is present. Median lobe of the aedeagus ventrally curved in all species. Parameres with 3 setae.

Female genitalia (fig.44). Spermatheca with small reservoir almost triangular and a well sclerotized and a long annulus receptaculi which is "trumpet shaped".

DISTRIBUTION (fig. 46). Southwestern China (NW Sichuan, Qinghai, C Tibet).

AFFINITIES. The subgenus *Josefia* groups species very closely related to each other. It belongs to the group of subgenera of *Bembidion* with discal elytral pores in the third interval. Within

this group *Josefia* seems to be rather isolated. The common character of having the apical elytral pore isolated, as discussed above, probably due to inheritance from a common ancestor, does not mean any close relationship with other subgenera sharing the absence of the apical stria. The group that seems to be most closely related is the chinese subg. *Microsinocys* Toledano, 1998, as indicated by the structure of the head and the antennomeres, the colour and the small size of its species.

The differences that reveal distinction between *Josefia* and *Microsinocys* at a subgeneric level are in the structure of the pronotum, sinuated at sides (not sinuated at sides and often with a tooth at the hind angles in *Microsinocys*), in the elytral structure, with elytral striae slightly impressed, but evident, and apical pore isolated (elytra almost completely flat with striae evanescent and with carinated apical stria in *Microsinocys*). In addition there are differences in male genitalia, with the internal sac of the median lobe of the aedeagus in almost all species of *Josefia* one of the two typical large sclerites of *Microsinocys* is missing; the curved shape of the median lobe of the aedeagus in *Josefia* is clearly recognizable from the more rectilinear shape of *Microsinocys*.

KEY TO SPECIES

1 - Pronotum smaller (ew/pw = 1.34 to 1.46), strongly cordate, with base clearly narrower than the anterior margin (figs. 18, 19, 20); laterobasal carina of pronotum rudimentary but present; species without evident elytral microsculpture (gr. *belousovi)* 2
- Pronotum larger (ew/pw = 1.31 to 1.37), less cordate, with base not narrower than the anterior margin (figs. 21, 22); laterobasal carina of pronotum absent; elytral microsculpture present in one species (gr. luisae) 4
2 - Elytral striae more superficial; pronotum more convex 3
- Elytral striae with deeper punctures, pronotum more depressed (fig. 19) . . . . . *.pieroi* n. sp.
3 - Larger size (3.84 to 3.96 mm); pronotum slightly less transverse (pw/pl = 1.39); elytral stria 7 normally absent or very superficial; median lobe of the aedeagus as in fig. 36; Rongbaca (Sichuan) . . . . . *.belousovi* n. sp.
- Smaller size (3.52 to 3.62 mm); pronotum slightly more transverse (pw/pl = 1.42 to 1.43)); elytral stria 7 evident; median lobe of the aedeagus as in fig. 38; Sichuan . . . . . *.taguense* n. sp.
4 - Pronotum more sinuate at sides, before hind angles (fig.21); elytral microsculpture evident, in transverse meshes (NW Sichuan, E Qinghai) . . . . . *.luisae* n. sp.
- Pronotum less sinuate at sides (fig. 22), before hind angles; elytral microsculpture completely vanished (C Tibet) . . . . . *.shugela* n. sp.

gr. *belousovi*

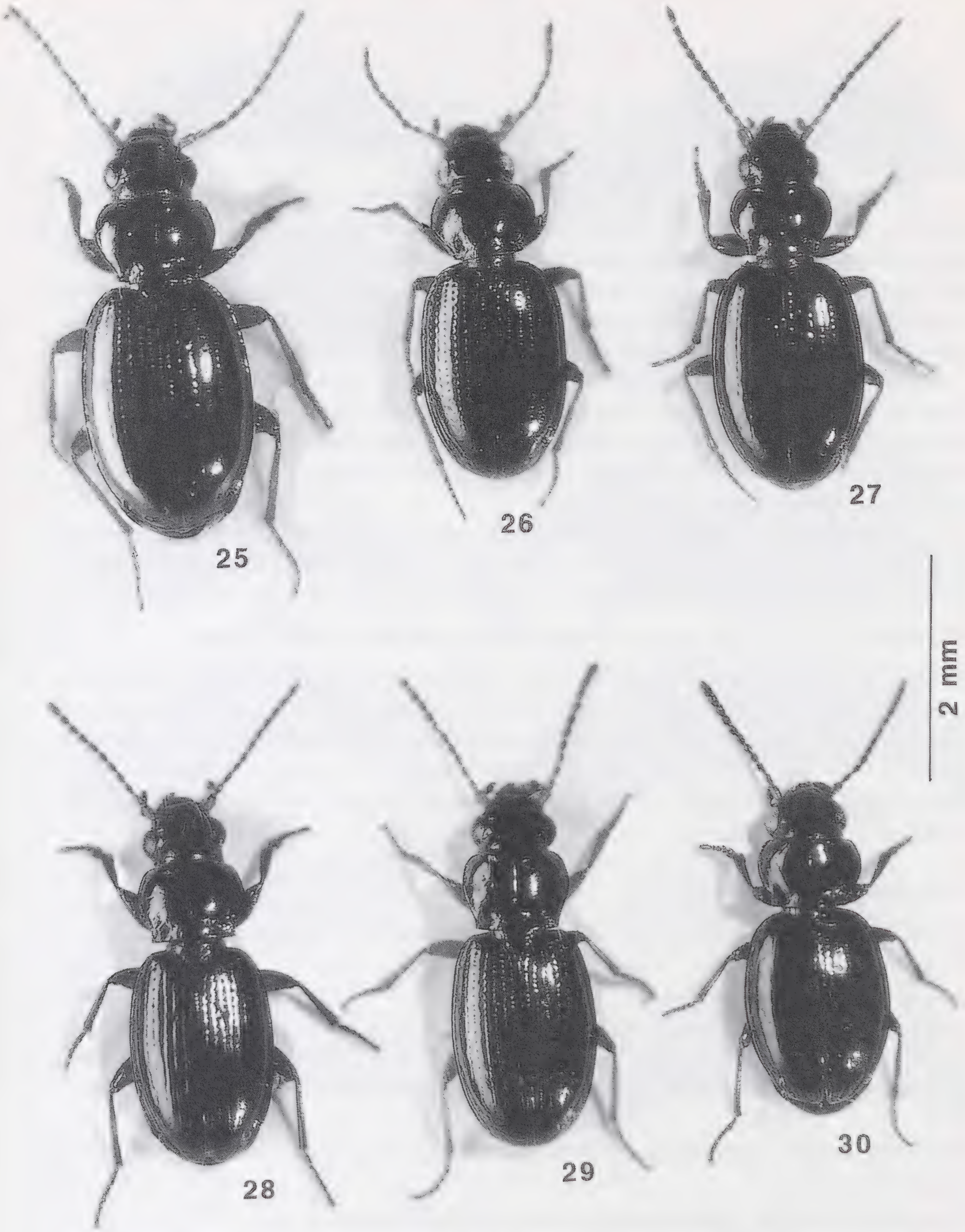
B. (Josefia) belousovi n. sp. (fig. 25)

DIAGNOSIS. The largest species of the subgenus *Josefia*, with transverse pronotum.

TYPE LOCALITY. China NW Sichuan, 31.46N 99.32E, pass 20 km NW Rongbaca, *Picea* forest 4091m.

TYPE SERIES: Holotype, ♂, "Ch. NW Sichuan, 31.46N 99.32E, pass 20 km NW Rongbaca, *Picea* forest 4091 m, 20.7.1995" (CT). Paratypes: 17♂♂, 10♀♀, same date and locality as the holotype (CT).

DERIVATIO NOMINIS. I dedicate this species to my friend Dr Igor Belousov of St. Petersburg, Russia, well known specialist of Carabidae and in particular of *Bembidion*.



Figs 25-30. Photographs of the habitus of: 25 - *B. belousovi*, holotype; 26 - *B. pieroi*, paratype; 27 - *B. taguense*, holotype; 28 - *B. luisae*, holotype; 29 - *B. shugela*, holotype; 30 - *B. schuelkei*, holotype.

DESCRIPTION. Length 3.84 to 3.96 mm. Piceous black, glossy, with faint metallic greenish reflections. Sides of elytra slightly lighter than the rest of elytra. Legs red-brown, antennomere 1, 2 and base of 3, 4 red, rest of antennae piceous.

Head relatively large, glossy and convex front with superficial and parallel frontal furrows, not extending to the clypeus; eyes normally convex. Antennae short with antennomeres slightly more elongate than in the other species.

Pronotum (fig. 18) transverse (pw/pl = 1.39) (ew/pw = 1.40) with well rounded margins, not strongly sinuated behind, before the hind angles, sharp, square. Base narrower than the anterior margin. Basal margin slightly sinuate, with lateral angles slightly more advanced than the median part of the margin. Basal foveae small, triangular, rather deep. Rudimentary laterobasal carina, almost invisible in some specimens, base evidently punctate with basal transverse impression well impressed. Median line evident, not deep.

Elytra (el/ew = 1.45 to 1.46) oval, strongly convex. Basal margin reaching a point between the beginning of stria 5 and 6. Elytral striae finely punctate, stria 7 slightly less impressed than the others, almost absent in most specimens, striae 2 to 7 ending slightly before the apex. Intervals flat. No microsculpture on the whole body, except for the superficial isodiametric meshes of the neck.

Male genitalia (fig. 36). Median lobe of the aedeagus larger than in the other species, very wide. Well sclerotized ribbon brush, not large, basal and ventral chitin platelet rather evident and developed. Basal part of the median lobe strongly curved to the left side.

DISTRIBUTION (fig. 46). Known only from the type locality in China, Sichuan.

AFFINITIES. Within *Josefia* this species forms a species group together with *B. taguense* n. sp.and *B. pieroi* n. sp. as indicated by the structure of the inner sac of the median lobe of the aedeagus and the pronotal shape, with base narrower than anterior margin. *B. belousovi* differs from these species only by the larger size, the more convex pronotum and the male genitalia. From *B. pieroi* n. sp. it is also recognizable by the less impressed elytral striae.

B. (Josefia) pieroi n. sp. (fig. 26)

DIAGNOSIS. The species of *Josefia* with transverse pronotum with coarser punctuation of the elytra.

TYPE LOCALITY. China, W Sichuan, 3000 m Litang.

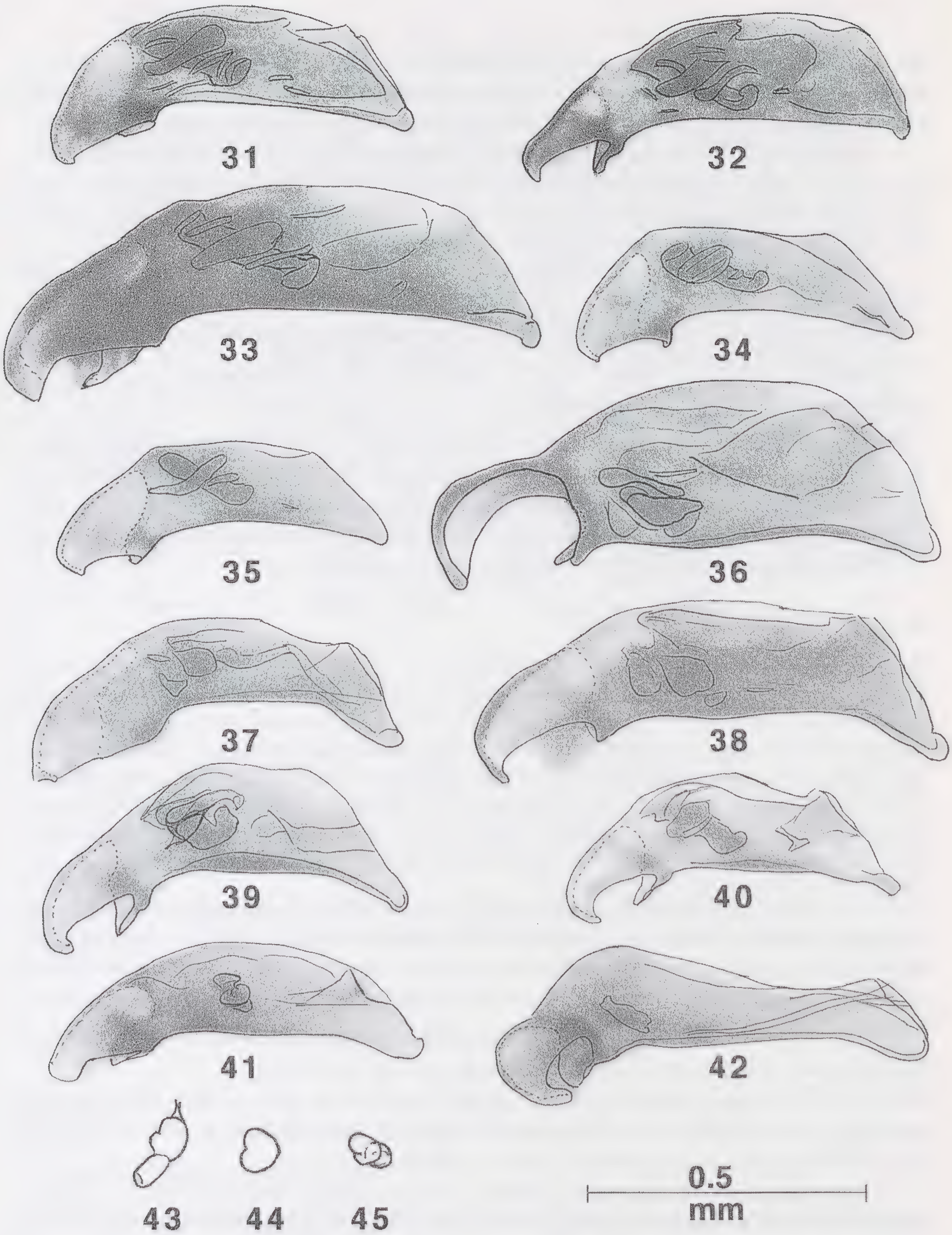
TYPE SERIES: Holotype, ♂, "China, W Sichuan, 3000 m Litang, 3-7-94" (CS). Paratypes: 1♀, same date and locality as the holotype (CS); 2♂♂, "China, SW Sichuan, r. Xiangcheng - Derong, p. 10 km NW Xiangcheng, 14-7-94" (CF, CT); 1♀, "China Litang, 10 Km South m. 4000, Sichuan 9.VII.1992" (CS).

DERIVATIO NOMINIS. Dedicated to Dr. Piero Toledano, my dear brother and my colleague in the dental practice.

DESCRIPTION. Length 3.26 to 3.50 mm. Colour as in *B. belousovi*.

Head, compared with *B. belousovi*, with frontal furrows slightly sharper, even though not deep, and front less convex. Antennae moniliform, shorter than in *B. belousovi*.

Pronotum (fig. 19) transverse (pw/pl = 1.38 to 1.40) (ew/pw = 1.34 to 1.45) with base evidently narrower than the anterior margin. Sides of pronotum anteriorly rounded, strongly restricted behind, oblique and very slightly sinuate before the hind angles, small and obtuse. In the hind half, lateral channel very deep. Anterior angle slightly protruding anteriorly from



Figs. 31-42. Left view of the median lobe of the aedeagus of: 31 - *B. exquisitum*; 32 - B. *hansi*; 33 - *B. brancuccii*; 34 - *B. perditum*; 35 - *B. daliangi*; 36 - *B. belousovi*; 37 - *B. pieroi*; 38 - *B. taguense*; 39 - *B. luisae*; 40 - *B. schuelkei*; 41 - *B. panda*; 42 - *B. aureofuscum*. Fig. 43-45: reservoir of the spermatheca of: 43 - *B. exquisitum*; 44 - *B. belousovi*; 45 - *B. jaechi*.

the anterior margin. Median line very slightly impressed, not reaching the basal margin; basal transverse impression deep. Base very slightly punctate, with large but superficial punctures. Laterobasal carina evident, sharp, well developed in almost all the specimens.

Elytra (el/ew = 1.44 to 1.47) oval. Basal margin reaching a point between the beginning of stria 5 and 6. Elytral striae 1 to 7 coarsely punctate, disappearing slightly before apex. Only stria 1, sulcate in the apical fourth, is deep to apex where it reaches stria 9. Intervals more convex than in *B. belousovi*. Apical pore isolated.

No microsculpture on the whole body, except for the superficial isodiametric meshes of the neck.

Male genitalia (fig. 37). Median lobe of the aedeagus narrower and with the apex more angulate ventrally than in *B. belousovi*, with the same sclerites.

DISTRIBUTION (fig. 46). China: Sichuan.

AFFINITIES. Belongs with *B. belousovi* and *B. taguense* to a species group within the subg. *Josefia*, characterized by the structure of the pronotum, more transverse than in the group of *B. luisae*. Within this group it is more closely related to the other relatively small species, *B. taguense*, as shown by the male genitalia, and it can be recognized from *B. taguense* by the pronotal shape and the coarser elytral punctuation.

B. (Josefia) taguense n. sp. (fig. 27)

TYPE LOCALITY. Cina - W Sichuan, Tagu 3700 m.

TYPE SERIES. Holotype, ♂, "Cina - W Sichuan, Tagu 3700 m, 27.VII.92" (CS); paratypes: 2♂♂, 2♀♀ same date and locality as the holotype (CS, CT); 1♀, "China, SW Sichuan, r. Xiangcheng - Derong, p. 10 km NW Xiangcheng, 14-7-94" (CS); 2♀♀, "China W-Sichuan (Ganzi Tibet Aut. Pref. Litang Co.), Shalui Shan, 25 km NW Litang, 4200 m, 30°08N/100°04E, 1.-3.VII.1999 (CW, CT); 1♂, 1♀, "CHINA: W-Sichuan Ganzi Tibet. Aut. Pref., Litang Co. Shalui Shan, Flußufer 25 km NW Litang, 4200m, 30°08N, 100°04E, Schotter, Steine, 1. VII. 1999" (CW); 1♂, 3♀♀ "CHINA: Prov. Sichuan Ganzi Tibetan Auton. Pref., Batang Co., Shalui Shan, Abies-Forest, 55km NE Batang, 30.07.68N, 100.03.77E, 4200m, 3.VII.1999" (CPz, CT).

I labelled as "Bembidion subg. Josefia cfr. taguense" one female specimen from "China, SW Sichuan, road Litang - Sumdo, pass 50 km SSW of Litang, 5.7.94" (CS), because it differs from the others by the more superficial striae and the more depressed pronotum. It seems similar to *B. taguense*, but may be an hybrid with *B. pieroi*; in any case I prefer to not include it in the type series.

DERIVATIO NOMINIS. Derived from the type locality.

DESCRIPTION. Length 3.52 to 3.62 mm. Colours as in *B. belousovi*.

Head with front almost completely flat, glossy, with frontal furrows parallel, extremely superficial, with posterior end more advanced than in *B. belousovi* and *B. pieroi*. Antennae moniliform, slightly more elongate than in *B. pieroi*.

Pronotum (fig. 20) transverse (pw/pl = 1.42 to 1.43) (ew/pw = 1.43 to 1.46), very similar to that of *B. belousovi*, though less convex, with base narrower than the anterior margin and hind angles as in *B. belousovi*. Laterobasal carina sharp, well developed. Transverse basal impression deep, faintly punctate. Basal foveae triangular, rather deep.

Elytra (el/ew = 1.43 to 1.45) oval, slightly more depressed than in *B. belousovi*. Basal margin reaching a point between the beginning of stria 5 and 6. Striae 2 to 7 very slightly

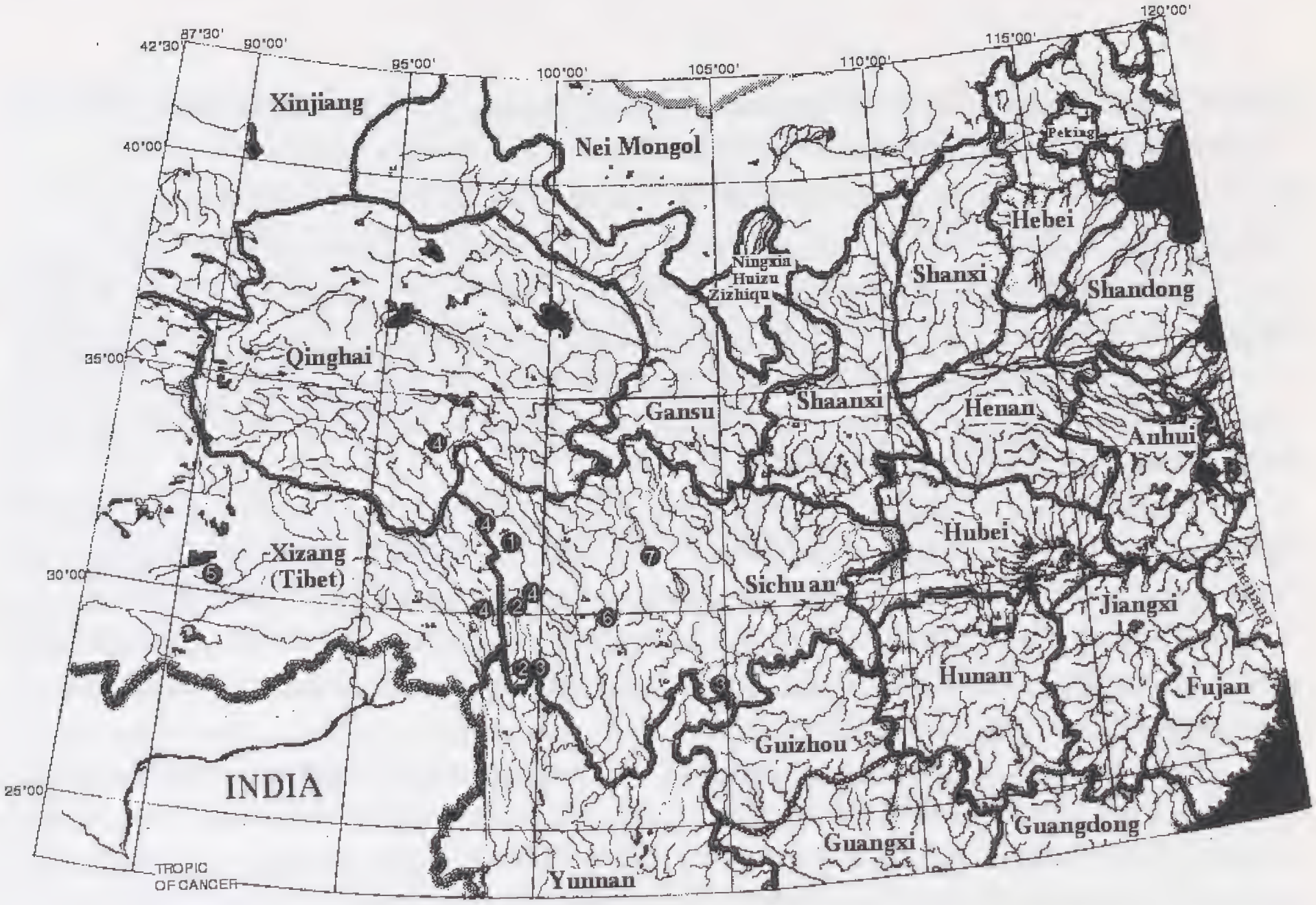


Fig. 46. Map of southwestern China showing the distribution of *B. belousovi* (1), *B. pieroi* (2), *B. taguense* (3), *B. luisae* (4), *B. shugela* (5), *B. schuelkei* (6) and *B. panda* (7).

more deeply impressed than in *B. belousovi*, ending slightly before apex. Stria 7 present, even though more superficial than the others and ending at the apical 2/3, more developed in few specimens, where it reaches apex with few punctures. Apical pore isolated.

No microsculpture on the whole body, except for the superficial isodiametric meshes of the neck.

Male genitalia (fig. 38). Median lobe of the aedeagus similar to *B. pieroi*, but slightly wider and with the apex less angulate ventrally. Same sclerites in the internal sac as in *B. belousovi* and *B. pieroi*.

DISTRIBUTION (fig. 46). China: Sichuan.

AFFINITIES. See under *B. belousovi* and *B. pieroi*.

gr. *luisae*

B. (Josefia) luisae n. sp. (fig. 28)

DIAGNOSIS. A *Josefia* with pronotum clearly larger and less transverse than in the other species.

TYPE LOCALITY. China, NW Sichuan, 32.30 N 98.25 E, pass 20 km S Quagca.

TYPE SERIES. Holotype, ♂, "Ch. NW Sichuan, 32.30 N 98.25 E, 17-18/7/1995, pass 20 km S Quagca, alpine meadow, ± 4100 M" (CT); paratypes: 1♂, "China, E Qinghai prov., Qingshuihe, 4200 m, 1.-

5.7.1992" (CS); 3♂♂, "China - W Sichuan, r. Litang - Batang, p. 70 km WNW Litang, 4675 m, 22.7.94, alp. region" (CF, CS).

DERIVATIO NOMINIS. Dedicated to my beloved mother, Luisa Roncari Toledano.

DESCRIPTION. Length 3.44 to 4.40 mm. Piceous black with very faint metallic reflections. Legs dark brown with base of tibiae darker, piceous; basal half of antennomere 1 and apical half of antennomere 2, 3 and 11 dark red, rest of antennae darker, dark brown to piceous.

Head flat and glossy with frontal furrows parallel, rather deep, and front with some wide transverse rugosities between the frontal sulci in some specimens. Eyes more convex than in the other *Josefia*, antennae moniliform.

Pronotum (fig. 21) large, rather depressed, less transverse than in the preceding species (pw/pl = 1.27 to 1.32), with base larger than the anterior margin, with sides rounded in the anterior 4/5, then rectilinear, ending in square hind angles. Base almost rectilinear. Anterior angles not evidently protruding anteriorly. Median line rather deep. Basal transverse impression rather superficial, base impunctate. Laterobasal carina almost absent. Basal foveae very superficial, flat.

Elytra (el/ew = 1.50 to 1.68) slightly wider than pronotum (ew/pw = 1.31 to 1.32), oval, but with shoulders more developed than in the precedingspecies. Basal margin reaching the beginning of stria 6. Elytral striae rather well impressed, punctate - sulcate, longer than in the precedingspecies, ending very slightly before the apex. Stria 7 present, slightly less impressed than the others. Apical pore isolated.

Microsculpture isodiametric, superficial on the frons, superficial in rather wide, slightly transverse meshes on the pronotal sides, superficial, in rather large, transverse meshes on elytra.

Male genitalia (fig. 39). Median lobe of aedeagus strongly curved ventrally, with narrow apex. Two main sclerites, on the right side one similar to sclerite "a" of *Microsinocys* Toledano, 1998, on the left side another one, with two oval small bags toward basal opening and a long narrow tube ending toward apex with an hook.

DISTRIBUTION (fig. 46). China: Sichuan, Qinghai.

AFFINITIES. Apparently forming together with *B. shugela* n. sp. a species group within *Josefia* as indicated by structure of the pronotum. Unfortunately the impossibility of comparing male genitalia does not allow confirmation of this hypothesis.

B. (Josefia) shugela n. sp. (fig. 29)

DIAGNOSIS. A *Josefia* very similar to *B. luisae*, from which it differs by the shape of the pronotum, less sinuate at sides, before the hind angles, and absence of elytral microsculpture.

TYPE LOCALITY. China - C. Tibet, Shugela Pass, 5100 m, 40 km E of Yambajing.

TYPE SERIES Holotype ♀, "China - C. Tibet, Shugela Pass, 5100 m, 40 km E of Yambajing, 31.5.1997" (CT).

DERIVATIO NOMINIS. Derived from the type locality, used in apposition.

DESCRIPTION. Length 3.48 mm. Head and pronotum piceous-black with faint greenish metallic reflections, elytra and pronotal basal foveae brown (type specimen not completely matu-

re). Antennomeres 1, 2 base of 3, 4 and apex of 11 red, rest of antennae darker. Legs reddish.

Head with superficial frontal furrows extending to the clypeal lateral pores, front glossy, slightly rugose between eyes. Eyes convex as in *B. luisae*.

Pronotum (fig.22) (pw/pl = 1.27) (ew/pw = 1.37) similar to that of *B. luisae*, but with side less sinuate, and more oblique in the hind fifth, where it reaches the basal margin forming a slightly obtuse hind angle. Basal margin very slightly curved, base very weakly punctate, basal transverse impression superficial. Median line deeper than in *B. luisae*. Anterior pronotal angles as in *B. luisae*.

Elytra (el/ew = 1.51) as in *B. luisae*, only with stria 8 very superficial, faintly punctate, and a very superficial apical stria only in the right elytron.

No microsculpture on head, pronotum and elytra.

Male genitalia. Unknown.

DISTRIBUTION (fig.46). Known only from the type locality.

SYSTEMATIC NOTES. This is a single female specimen, as is the other mentioned above as "*Bembidion* subg. *Josefia* cfr. *taguense*", but in this case the strong difference in the shape of the pronotum and the geographic distance suggests that this is a species distinct from *B. luisae*.

AFFINITIES. See under *B. luisae*.

Bembidion subg. *Microsinocys* Toledano, 1998

A new species of this subgenus is described here. The homogeneity of this subgenus is shown also by this species, which shares almost completely the external shape with *B. schillhameri* Toledano, 1998, and the median lobe of the aedeagus with *B. facchinii* Toledano, 1998.

The key to the species of *Microsinocys* in Toledano (1998) must be changed at couplet 9, and there must be added a new couplet 11, as follows:

9 - Smaller (2.6 - 2.8 mm) with laterally projecting tooth at hind angles of pronotum; basal margin of pronotum with median lobe evidently protruding posteriorly 11

\- Larger (2.9 mm), without laterally projecting tooth at hind angles of pronotum; median lobe of aedeagus large (0.68 mm) with large sclerites and evident ventral gibbosity . . . . . .
. . . . . .*jani* Toledano, 1998

11 -Median lobe of the aedeagus without evident ventral gibbosity and without dorsal emargination; Yunnan, Yulongxueshan . . . . . .*schillhammeri* Toledano, 1998

\- Median lobe of the aedeagus with evident ventral gibbosity (fig. 41) and dorsal emargination; Sichuan, Daxue Shan . . . . . .*schuelkei* n. sp.

Bembidion (Microsinocys) schuelkei n. sp. (fig. 30)

DIAGNOSIS. A *Microsinocys* with elytra on the average slightly more convex than in *B. schillhammeri* Toledano, 1998, but almost impossible to distinguish from this species by the external characters. The only character allowing to separate them is the median lobe of the aedeagus, very similar to that of *B. facchinii* Toledano, 1998.

TYPE LOCALITY. China: W-Sichuan, Ganzi Tibet. Aut. Pref., Kangding Co., Daxue Shan, 10 km S Kangding, 29.59 N, 101.55 E, 3150 m.

TYPE SERIES. Holotype, ♂, "China: W-Sichuan, Ganzi Tibet. Aut. Pref., Kangding Co., Daxue Shan, 10 km S Kangding, 29.59 N, 101.55 E, 3150 m, Flußtal, Gesiebe, Felsnieschen, 26.VI.1999" (CW). Paratypes: 15♂♂, 3♀♀, same date and locality as the holotype (CSk, CW, CT); 14♂♂, 6♀♀ "China: W-Sichuan, Ganzi Tibet Auton. Pref. Daxue Shan, 10km S Kangding, 3150m, 29.59.N, 101.55.E, 26.VI.1999 (CPz, CT); 2♀♀, "CHINA: W Sichuan, 15 km W Kangding, Rie.138, 3250m, 29°57N 102°54E, 19.VII.98" (CMb).

DERIVATIO NOMINIS. Dedicated to my friend Michael Schülke from Berlin, in whose collection I found some paratypes of this new species.

DESCRIPTION. Length 2.80 to 2.84 mm. Piceous-black, shiny; legs, antennomeres 1, 2 and base of the antennomere 3 brown. Rest of antennae darker.

Head as in *B. schillhammeri*.

Pronotum (pw/pl = 1.45 to 1.50) similar to that of *B. schillhammeri*, with lateral, rectilinear, part of the posterior margin slightly shorter than in *B. schillhammeri*.

Elytra (el/ew = 1.30 to 1.33) slightly more convex than in *B. schillhammeri* on average. In a few specimens the elytra seem identical. The elytral striae are slightly more impressed than in *B. schillhammeri*.

Male genitalia (fig. 40). Median lobe of the aedeagus showing the typical structure of *Microsinocys*, with the sclerites "a" and "b"; extremely similar to the aedeagus of *B. facchinii*.

DISTRIBUTION (fig. 46). Known only from the type locality in China, Sichuan.

AFFINITIES. Belonging to the *schillhammeri* group of the subg. *Microsinocys* and surely derived from a common ancestor with *B. schillhammeri*, since in my opinion the structure of the pronotum in this group is the more important infrasubgeneric character.

Bembidion subg. **Bembidromus** n. subg.

For a single very strange species, *B. panda* n. sp., I describe here a new subgenus, as it does not belong in any known subgenus.

DIAGNOSIS. Subgenus characterized by small size (2.76 to 3.04 mm), very large and convex eyes, supernumerary setae on the last abdominal sternites, metallic integument and almost complete elytral striae.

TYPE SPECIES. *Bembidion panda* herewith described.

DERIVATIO NOMINIS. The peculiar combination of characters shared with subgenera not closely related to each other led me to use for this new supraspecific taxon a name composed of parts of the names of two very important supraspecific taxa of the Bembidiini; the gender of the name is masculine.

DESCRIPTION. Length 2.76 to 3.04 mm. Integument with faint metallic reflections.

Head large, with convex eyes. Front with frontal furrows deep and parallel.

Pronotum with sides very slightly sinuated before hind angles. Basal margin narrower than the anterior one. Front angles evidently protruding anteriorly. Base with a median lobe protruding behind. Sides of the base with an emargination rather deep before the hind angle,

that, therefore, is acute. Base rugose, impunctate.

Metasternal process slightly bordered. Last abdominal sternites with short supernumerary setae.

Legs short.

Elytra short (el/ew = 1.36 to 1.38), depressed, with deeply impressed striae, almost complete. Basal margin reaching the beginning of stria 5 where it is curved behind to join the stria with an obtuse angle. Apical stria long and deep, connected to stria 5. Scutellar striole short. Discal elytral pores in the third interval, very near stria 3.

Male genitalia (fig. 41). Base of median lobe of aedeagus strongly curved to left side, basal opening rather large, on the right side. Internal sac feebly sclerotized, with a single group of small sclerites. Left paramere with four apical setae, right one with three.

Female genitalia. Unknown.

DISTRIBUTION (fig. 46). China, Sichuan.

AFFINITIES. The peculiar structure of the pronotum, with hind angles posteriorly protruding, does not suggest any close relationship with other subgenera; I am otherwise aware of it, in a more developed form, only in *B.* (*Thaumatoperyphus*) *ajmonis* Netolitzky, 1934, an indian species evidently not related to *B. panda* n. sp. I believe that in the case of *B. panda* it could be interpreted as a specific character. The extremely small size and the position of the discal pore punctures, in the third interval near stria 3, the anterior one more evidently in the interval, seem to place this subgenus relatively near to subgenera related to *Bembidion* s.str., as *Microsinocys*, even though I have previously expressed doubts about the validity of the position of the discal pore punctures as an indicator of relationships. The structure of the male genitalia does not show any similarity with *Microsinocys*. The new subgenus shares the elytral structure, having almost complete striae, with subgenera clearly not related to *Bembidion* and *Microsinocys*, including the group of *Plataphus* s.l. and *Bembidionetolitzkya*, but a close relationship with these subgenera is excluded by the structure of the male genitalia. The head with large and very convex eyes is shared by *B.* (*Plataphodes*) *farkaci* Toledano & Sciaky, 1998, occurring in the same region, sharing also the almost complete striae and the metallic integument, but all the species of *Plataphodes* have the basal margin reaching stria 4 while in *Bembidromus* the basal margin reaches stria 5.

The most important diagnostic character of this subgenus, the presence of supernumerary setae on the last abdominal sternites, is shared with the subgenera *Trichoplataphus* Netolitzky, 1914, *Blepharoplataphus* Netolitzky, 1920, and *Aureoplataphus* Netolitzky, 1942 (see below). The presence of this character in *Bembidromus* could be matter of convergence, not necessarily meaning any close systematic relationship with these subgenera, even though the new subgenus shows some similarities in the structure of the internal sac with the species of *Blepharoplataphus*.

In any case the systematic independence of this subgenus is paradoxically emphasized by the sharing of characters with many supraspecific taxa not closely related to each other.

Bembidion (Bembidromus) panda n. sp. (fig. 47)

DIAGNOSIS. A *Bembidion* species very small (2.76 to 3.04 mm) showing depressed pronotum with emarginated basal margin at the hind angles (fig. 24) and almost complete, sul-

cate, elytral striae, and elytral discal pores adjoining stria 3, each one in a fovea extended to interval 3, and therefore belonging to *Bembidromus*.

TYPE LOCALITY. China, W. Sichuan (Aba Tibet. Aut. Pref. Weizhou Co.), Quionglai Shan, Wolong valley, 69 km WSW Dujiangyan, 3900 m, 30°54N, 102°59E.

TYPE SERIES. Holotype, ♂, "China, W. Sichuan (Aba Tibet. Aut. Pref. Weizhou Co.), Quionglai Shan, Wolong valley, 69 km WSW Dujiangyan, 3900 m, 30°54N, 102°59E (alpine meadow), 15.VII.1999" (CW); Paratype, ♂, same date and locality as the holotype (CT).

DERIVATIO NOMINIS. Derived from the common name of *Ailuropoda melanoleuca* David, 1869, another very interesting (not entomological!) species inhabiting the same region as the species described here.

DESCRIPTION. Length 2.76 to 3.04 mm. Black with faint greenish metallic reflections. Legs dark brown with darker femurs. Antennomere 1 reddish brown, rest of antennae piceous brown.

Head large, with convex eyes, narrower than the pronotum. Front smooth with frontal furrows deep and parallel, not extending to the clypeus.

Pronotum (fig. 23) transverse (pw/pl = 1.48 to 1.51) with sides very slightly sinuated before hind angles. Basal margin narrower than the anterior one. Front angles evidently protruding anteriorly. Base with a median lobe protruding behind. The sides of the base with an emargination rather deep before the hind angle, that, therefore, is acute. Base rugose, impunctate.

Legs short.

Elytra short (el/ew = 1.36 to 1.38), depressed, with striae 1 to 5 deep, sulcate, reaching apex. Stria 6 and 7, slightly less deeply impressed, ending a little before apex. Basal margin reaching the beginning of stria 5 where it is curved behind to join the stria with an obtuse angle. Apical stria long and deep, connected to stria 5. Scutellar striole short. Discal elytral pores in the third interval near stria 3, the anterior one more evidently in the interval, in a fovea extended in the paratype over interval 3 and in the inner half of interval 4, smaller in the holotype.

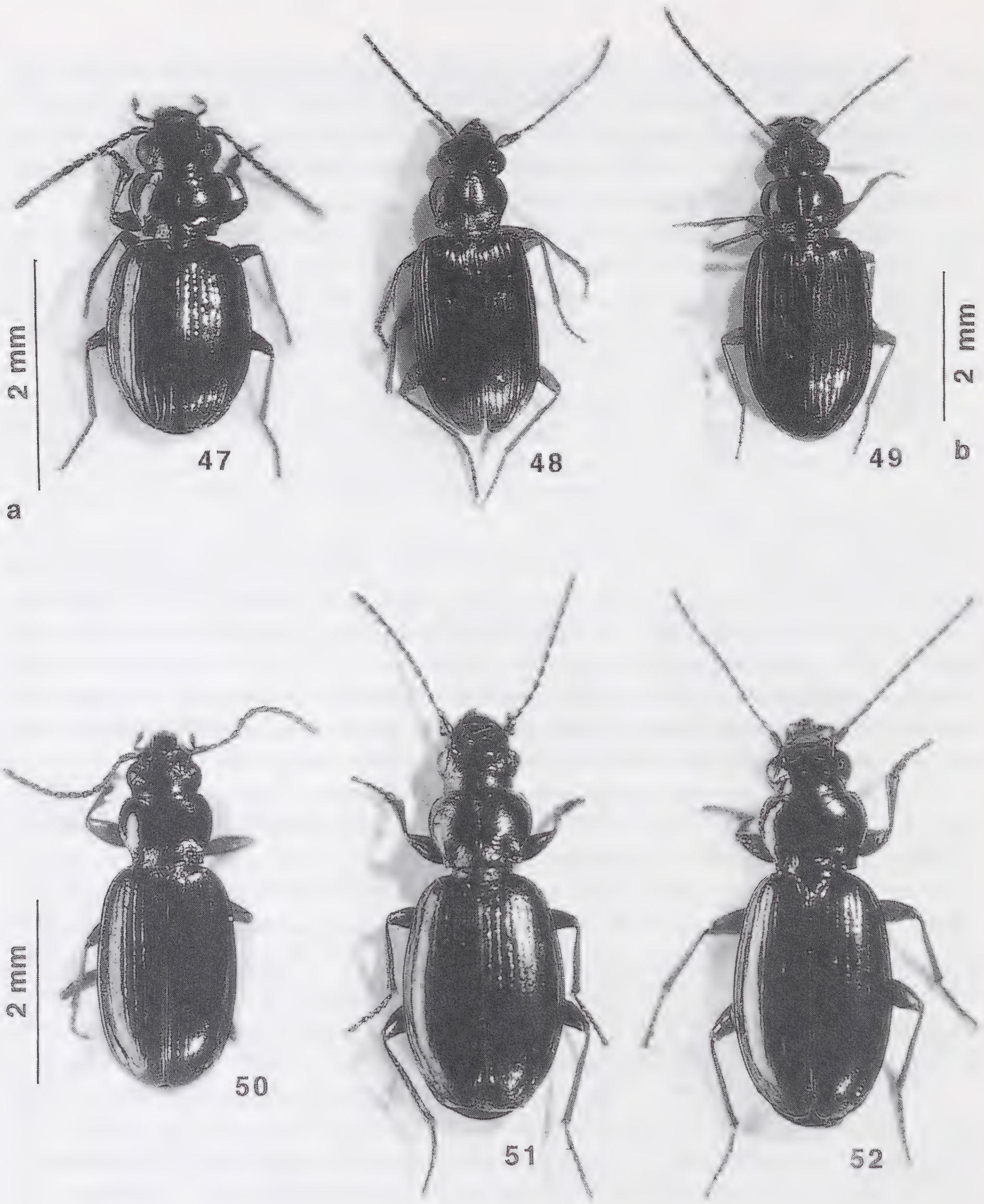
Microsculpture in isodiametric meshes on the neck, in large transverse meshes on the elytra where is faint, and on the pronotum, where is very superficial, rather difficult to see, almost absent.

Male genitalia (fig. 41). Median lobe of aedeagus small, linear, with dorsal margin gently curved and rounded apex. Base strongly curved to the left side, basal opening rather large, on the right side. Internal sac poorly sclerotized, with a single group of small sclerites, rather compact if seen from the left side, clearly formed by two sclerites, the larger one on the right side, if seen from the ventral side; a very small basal chitin platelet is also visible.

DISTRIBUTION (fig.46). Known only from the type locality in China, Sichuan.

Bembidion subgg .*Trichoplataphus* Netolitzky, 1914, *Blepharoplataphus* Netolitzky, 1920 and *Aureoplataphus* Netolitzky, 1942

Among the unidentified Chinese material of the Naturhistorisches Museum, Wien, I discovered a taxon of the group of *Plataphus* sensu lato with supernumerary setae on the



Figs. 47-52. Photographs of the habitus of 47 - *B. panda*, holotype (magnification a); 48 - *B. aureofuscum*; 49 - *B. jaechi*, holotype (magnification b); 50 - *B. baehri*, paratype; 51 - *B. echarouxi*, holotype; 52 - *B. maddisoni,* holotype (magnification c).

abdominal sternites, appearantly new, slightly related to the known *Bembidion* species belonging to the subgenus *Trichoplataphus* Netolitzky, 1914, which also share this character. In order to identify the systematic position of this strange species with light red legs, a character unusual for the group, I examined many type specimens of Bembidiini from

China in the Netolitzky's Collection, preserved in the same Museum. During an interesting discussion about the fauna of this area, Dr. Manfred Jäch of the NMW suggested that I examine the possibility of systematic relationships with Japanese taxa. The study of a paratype and one specimen of *B.* (*Aureoplataphus*) *aureofuscum* Bates, 1883, in the NMW revealed that it was related to the new species I was studying.

SYSTEMATIC DISCUSSION. Some of the characters used for the subgeneric diagnosis by Netolitzky (1942) are here interpreted as specific, and the diagnosis is here slightly changed to include the common characters of both species. But, before I discuss the subg. *Aureoplataphus*, I re-examination of the subgenera of *Bembidion* with supernumerary setae on the abdominal sternites is in order.

In the past, some of these subgenera have been synonymized with *Trichoplataphus* Netolitzky, 1914. In Müller-Motzfeld (1985) *B. kara* Andrewes, 1921, the type species of subg. *Triporus* Andrewes, 1921, is attributed to *Trichoplataphus*. The synonymy of both subgenera can certainly be accepted because the species of *Triporus* (*B. kara,* Andrewes, 1921, and *B.tambra* Andrewes, 1923) differ from the species of *Trichoplataphus* only by the presence of three discal setae on the elytra. The number of discal elytral pores in Bembidiini is not necessarily a supraspecific indicator. For example, in *Ocys* Stephens, 1829 some species having only one discal elytral pore, such as *Ocys* (*Ocys*) *harpaloides* Serville, 1821, and other species having two pores, such as *Ocys* (*Ocys*) *quinquestriatus* Gyllenhal, 1910, certainly belong to the same subgenus. Also in the material I examined recently I could see a specimen of *B.* (*Ocydromus*) *hasurada* Andrewes, 1924, from China, Sichuan, with two discal pores in the left elytron, and three in the right one.

The species of *Blepharoplataphus* Netolitzky, 1920, (e.g. *B. hasti* Sahlberg, 1827, *B. virens,* Gyllenhal, 1827, *B. hiogoense* Bates, 1873) have been separated from *Trichoplataphus* by the taxonomists because of the length of the abdominal supernumerary setae, a character not important, in my opinion, and not useful for the taxonomist, since in specimens lacking setae it cannot be detected. For this reason *Blepharoplataphus* has been listed as synonym of *Trichoplataphus* by some authors (Jedlicka 1965; Kryzhanovskij et al., 1995). But the valid diagnostic character to isolate the subg. *Blepharoplataphus* is in my opinion the general body shape, very similar to the habitus of *Plataphus* s.str. as *B. prasinum* Duftschmid, 1812, *B. gebleri* Gebler, 1833, etc., with pronotum rather small and large elytra, together with the presence of the supernumerary setae, and the male genitalia, which is very similar in all of the species. Therefore the species of this group are easy to recognize, and they are clearly more related to each other than to species of *Trichoplataphus* s.str. Therefore I prefer to remove here the subg. *Blepharoplataphus* from synonymy with *Trichoplataphus*:

Blepharoplataphus Netolitzky, 1920 **bon. subg.** nec syn. of *Trichoplataphus* Netolitzky, 1914.

Since within the whole group of *Plataphus* sensu lato red appendages is extremely rare, being a peculiarity of the two species dealt with here below, their independence at a supraspecific level in my opinion is not unlikely, and the validity of the subgenus *Aureoplataphus* can be confirmed here, even though the colour of legs is seldom a supraspecific indicator among Bembidiini.

I believe that *Trichoplataphus*, *Blepharoplataphus* and *Aureoplataphus* can derive from a common ancestor near *Plataphus* s.str., evolved in three lines which independently acquired supernumerary setae. This in my opinion is suggested by the homogeneity of the species within each one of the three subgenera dealt with here.

Even though I believe that a very close systematic relationship between the three subgenera dealt with here and *Bembidromus* is unlikely, the following key, to be complete, includes also this subgenus.

KEY TO THE PALAEARCTIC SUBGENERA WITH SUPERNUMERARY SETAE ON THE ABDOMINAL STERNITES

1 - Size smaller; if size of 4.16 to 4.68 mm, then legs red; if legs dark, then very small size (2.76 to 3.04 mm), very convex eyes and pronotum with hind angles protruding posteriorly 2
- Size larger (more than 4.70 mm); legs darker 3
2 - Legs red, size larger (4.16 to 4.68 mm), eyes normally convex, pronotum with basal margin gently emarginate at sides and hind angles not protruding behind . . . . . .subg. *Aureoplataphus* Netolitzky, 1942
- Legs dark, size smaller (about 3.00 mm), eyes markedly convex, pronotum with hind angles protruding posteriorly . . . . . .subg. *Bembidromus* nov.
3 - Habitus similar to *Plataphus*, with metallic, rather matt integument, pronotum rather small, elytra rather wide, with maximum width behind middle; all species with two discal elytral pore . . . . . .subg. *Blepharoplataphus* Netolitzky, 1920
- Species often with piceous - black color, shiny, often iridescent, with pronotum on the average larger and elytra more parallel, more elongate; some species with three discal elytral pores . . . . . .subg. *Trichoplataphus* Netolitzky, 1914

REVISION OF *BEMBIDION* SUBG. *AUREOPLATAPHUS* NETOLITZKY, 1942

Bembidion (*Aureoplataphus*) Netolitzky, 1942

TYPE SPECIES. *Bembidion aureofuscum* Bates, 1883

REDESCRIPTION. Length 4.16 to 4.68 mm. Head, pronotum and elytra metallic with bronze - greenish reflections. Appendages completely light red.

Head slightly narrower than pronotum (pw/hw = 1.10 to 1.24) with deep, parallel, furrows, extended to the clypeus, anterior supraorbital pore with a very large umbilicate pore. Eyes prominent and antennomeres rather elongate.

Pronotum transverse, rather depressed, with basal foveae rather superficial, square, and well developed laterobasal carina. Anterior transverse impression and median impression superficial, this last not reaching the basal margin. Basal transverse impression more deep. Base impunctate.

Legs rather short.

Elytra with parallel sides, square shoulders, basal margin reaching stria 5. Umbilicate pore at the common beginning of striae 1, 2 and scutellar. Elytral striae punctate-sulcate. Scutellar stria well developed. Apical stria as a prolongation of stria 5, slightly more deep than the rest of stria. Two discal pores, the anterior one at one third, the posterior one at the two-thirds of elytra.

Metasternal process unbordered.

Male genitalia (fig. 42). Known only in the type species. Median lobe of aedeagus with ventral margin rectilinear and apex ventrally bent. Dorsal margin emarginated, with the typical shape of *Plataphus* s.l. Base strongly bent to the left side. Left paramere apparently with four apical setae, right one with three.

Female genitalia (fig. 45). Spermatheca simple, with a sclerotized reservoir apparently formed by a single cavity. The duct is almost invisible in the holotype of *B. jaechi*. A poorly sclerotized, small, "bell shaped" annulus receptaculi is present.

DISTRIBUTION. Eastern palaearctic region, Japan and China (Hunan).

AFFINITIES. Belonging to the group of subgenera near *Plataphus* with supernumerary setae on the last abdominal sternites. Within this group, it is the subgenus more strictly related to *Plataphus* as indicated by the structure of the median lobe of the aedeagus.

KEY TO SPECIES:

1 - Elytral striae more impressed, stria 7 deeply impressed, pronotum sinuate before hind angles, basal margin of pronotum with emarginate sides (Japan) . . . . . .*B. aureofuscum* Bates, 1883
- Elytral striae lightly impressed, stria 6 more or less impressed, stria 7 absent, pronotum less sinuate before hind angles, basal margin of pronotum rectilinear (China) . . . . . .*B. jaechi* n. sp.

B. (*Aureoplataphus*) *aureofuscum* Bates, 1883 (fig. 48)

TYPE LOCALITY. Japan, Nagasaki, Kumamoto, Miyanoshita (Jedlicka, 1965). Type in the Natural History Museum, London.

EXAMINED MATERIAL. 1♂, Paratype, "Nagasaki, 22.V. - 3.VI.81" "Japan, G. Lewis, 1910-320" "B. aureofuscum, cotype, Bates" (NMW); 1♂, "Nippon moyen, Gallois 1912, Mus. Paris dedit" (NMW).

REDESCRIPTION. Length 4.16 mm. Elytra bronze, metallic, with faint greenish reflections. Antennomere 1 red, slightly infuscated at apex, rest of antennae dark brown. Legs red. Palps brown, with penultimate article of maxillary palps piceous.

Pronotum transverse (pw/pl = 1.32 to 1.36), depressed, with basal margin emarginate laterally. Sides of pronotum slightly but evidently sinuate before hind angles. Basal foveae rather deep, square, with lateral carina, median line rather superficial, not reaching the basal margin, anterior transverse impression rather shallow, basal transverse impression deeper.

Elytra (el/ew = 1.61 to 1.64 mm) with parallel sides, square shoulders, basal margin reaching stria 5, and terminating here with a very small tooth in the paratype, lacking in the other examined specimen. Discal pore punctures adjoining stria 3, foveate. All elytral striae well impressed, complete.

Microsculpture rather evident, isodiametric, on head, pronotum and elytra.

Male genitalia (fig. 42). Median lobe of the aedeagus with ventral margin rectilinear and apex bent ventrally. Dorsal margin emarginated, with the typical shape of *Plataphus* s.l. Base strongly bent to the left side. Apex "axe shaped" with rounded extremity. One small sclerite near basal opening. Left paramere apparently with four apical setae, right one with three.

DISTRIBUTION. Japan.

B. (Aureoplataphus) jaechi sp.n. (fig. 49)

TYPE LOCALITY. China, NW - Hunan Wulingyuan N Davong, Suoxiyu.

TYPE MATERIAL. Holotype, ♀, "CHINA, NW - Hunan Wulingyuan N Davong, Suoxiyu, 31.10.1993, 450 m" (NMW); Paratype, ♀, same data of the Holotype (CT).

DERIVATIO NOMINIS. I dedicate this species to my friend Dr. Manfred Jäch of the Naturhistorisches Museum, Wien, who suggested to me the way to solve my doubts regarding the systematic position of this species.

DESCRIPTION. Length 4.60 to 4.68 mm. Dark metallic green with rather matt elytra. Appendages red, except for the penultimate article of maxillary palpi, the apical two-thirds of the antennomeres 2 to 4, and the antennomeres 5 to 11, which are dark brown.

Pronotum transverse (pw/pl = 1.41 to 1.49), depressed, with rectilinear basal margin, sides slightly sinuate before the hind angles. Basal foveae square, laterally delimited by a carina. Lateral margin a little wider than in *B. aureofuscum*. Anterior and posterior transversal impression rather evident. Median line rather deep.

Elytra (el/ew = 1.47 to 1.55) more flat than in *B. aureofuscum*, with less impressed striae. Stria 7 absent, stria 6 almost absent in the paratype. The rest of striae reaching the apex, the outer slightly less impressed apically. Discal pores adjoining stria 3, smaller than in *B. aureofuscum*, not foveate.

Microsculpture less evident than in the precedingspecies, isodiametric, in large meshes, on the head, very superficial, in sharp, transverse meshes on the pronotum, isodiametric on the basal impressions of the pronotum, almost invisible on elytra.

Male genitalia. Unknown.

Female genitalia (fig.45). Spermatheca simple, with a sclerotized reservoir apparently formed by a single cavity. The duct is almost invisible in the holotype. A poorly sclerotized, small, "bell shaped" annulus receptaculi is present.

DISTRIBUTION (fig. 92). China: Hunan.

Bembidion subg. *Ocydromus* Clairville, 1806

An interesting way to deal with the very difficult *Ocydromus* complex has been proposed by Kryzhanovskij et al. (1995): several subgenera of *Bembidion* have been downgraded to species groups and included in a very large subg. *Ocydromus* together with many other species groups. These subgenera are: *Peryphus* Stephens, 1829, *Asioperyphus* Vysoky, 1986, *Synechoperyphus* Netolitzky, 1943, *Ocydromus* Clairville, 1806, *Ocyturanes* Müller-Motzfeld, 1986 and *Peryphanes* Jeannel, 1941. The systematic position of these taxa has been fixed in the past in several different ways.

Andrewes (1935) included most Indian species of the *Bembidiini* in the genus *Bembidion*, except for the few species belonging to *Asaphidion* Gozis, 1886, and *Tiruka* Andrewes, 1935. The Indian species of *Bembidion* were divided in species groups without systematic importance, as mentioned above, to make the identification of the species easier.

Jeannel (1941) included in the genus *Peryphus*, independent from the genus *Bembidion*, the French species of the subgg. *Peryphus* and *Peryphanes*, together with the species of *Nepha* Motschulsky, 1864, *Daniela* Netolitzky, 1910 (= *Bembidionetolitzkya* Strand, 1929),

Peryphiolus Jeannel, 1941, *Omoperyphus* Netolitzky, 1931, *Testediolum* Ganglbauer, 1892 and *Euperyphus* Jeannel, 1941.

Netolitzky (1942-43) kept the palearctic species of this group within *Peryphus*, as a subgenus of *Bembidion*, with *Peryphus* divided into many species groups; *Daniela*, *Nepha*, *Omoperyphus*, *Synechoperyphus*, *Euperyphus* and *Testediolum* are dealt with as independent subgenera.

Antoine (1955), was the first to use the name *Ocydromus* as the generic name for the groups belonging to *Peryphus* according to Jeannel (1941), being the oldest valid name for the group, and included within the genus *Ocydromus* the Moroccan species belonging to the subgenera *Peryphus*, *Peryphanes*, *Omoperyphus*, *Nepha* and *Synechostictus*; *Daniela* is dealt with as synonym of *Peryphus*.

Lindroth (1963) for the Northern American fauna arranged the *Bembidion* species as belonging to species groups of this genus, except for *Phrypeus* Casey, 1924, treated as independent genus.

Jedlička (1965) included the eastern palaearctic species within the subg. *Peryphus*, and divided it into four species groups: gr.*ovale*, gr. *thermarum*, gr. *poppii* and gr. *Peryphus* (sic!).

Perrault (1981) ranged *Ocydromus* as a genus independent from *Bembidion*, attributing to the latter the species belonging, according to Jeannel (1941) to the "séries phylétiques de *Bembidion* et *Notaphus*". According to Perrault (1981) the valid genera of the *Bembidiini* are: *Asaphidion*, *Amerizus*, *Synechostictus*, *Cillenus*, *Ocys*, *Lymneops*, *Odontium*, *Phyla*, *Metallina*, *Bembidarenas*, *Ocydromus* and *Bembidion*.

Müller-Motzfeld (1984, 1985, 1986a, 1986b, 1988) used the name *Ocydromus* as a subgenus of *Bembidion*, for the species of the groups *decorum*, *saxatile*, *atlanticum*, and *modestum*.

In the checklist of italian Carabidae, Vigna Taglianti (1993) followed the arrangement of Perrault (1981).

Morita (1994b) arranged *Plataphus* as subgenus of the genus *Ocydromus*.

Müller-Motzfeld (1998) provided a list of the subgenera of *Bembidion* near *Ocydromus*, and described two new subgenera, *Politophanes* and *Terminophanes*: the subgenera listed in this work were interpreted as species groups of the subgenus *Ocydromus*. They are: *Synechoperyphus* (syn. of *Ocydromus* s.str.), *Peryphanes*, *Ocyturanes*, *Peryphiolus*, *Peryphus*, *Asioperyphus* and *Euperyphus*.

Most species groups mentioned in Müller-Motzfeld (1998) and Kryzhanovskij et al. (1995) have subgeneric names: this is incorrect, since the names of genus rank must not be used for infrasubgeneric groups. Nevertheless, except for this nomenclatorial mistake this way to deal with the *Ocydromus* complex is in my opinion the best one. I discussed above the character of the position of the discal elytral pores, used to separate both taxa at the generic level by Perrault (1981), a character too inconstant to be used for the generic diagnosis.

Moreover, a generic division between *Bembidion* and *Ocydromus* adds some problems because it does not allow us to include with certainty several taxa (e.g. *Plataphus*, *Plataphodes*, *Trichoplataphus*, *Blepharoplataphus*, *Aureoplataphus*, *Parataphus*, *Hirmoplataphus*, *Bembidionetolitzkya*, *Nepha*,) within *Bembidion* or *Ocydromus*, and an isolation of these taxa in independent genera, according to Jeannel (1941) and Vigna Taglianti

(1993) splits at too high a level a very homogeneous group as *Bembidion* sensu lato.

To divide into several subgenera, more easy to study, the species groups included by Kryzhanovskij et al. (1995) in the subg. *Ocydromus* has been one of the aims of the supra-specific study of Bembidiini in the past, as shown above. In my opinion this division is at present also impossible. In fact most groups of species of *Ocydromus* share several diagnostic characters in different combinations, and this often does not allow the separation into monophyletic groups which could be treated as independent subgenera.

Therefore I agree with Kryzhanovskij et al. (1995): all these taxa must be attributed to the extremely large and worldwide subg. *Ocydromus*, divided in species groups. Nevertheless, in this work I prefer to refrain from a formal synonymization of the taxa downgraded to species groups waiting for more evidence.

Several of these species groups will be discussed below.

Bembidion (*Ocydromus*) gr. *lenae*

DIAGNOSIS. An eastern palaearctic and nearctic group of species of the subg. *Ocydromus* characterized by dark integument with unspotted and convex elytra, large and convex pronotum with basal border wider than the anterior one, head more or less punctate behind the frontal sulci, antennomere 1 red and long main sclerite with a coil in the median lobe of the aedeagus.

SYSTEMATIC NOTES. The difficulty in finding of a clear boundary between this and other groups in the complex of *Ocydromus* sensu lato did not lead any author to isolate the species of the *lenae* group into an independent subgenus, even though this need is felt by other specialists (Seiji Morita, personal communication). Müller-Motzfeld (1998) described a new subgenus, *Politophanes*, for *B. polites* Andrewes, 1935 (fig. 56). This species shows a very strange feature in the median lobe of aedeagus: a sclerotized tooth near the apex, on the dorsal side (fig. 59). But the rest of the inner sac of the aedeagus, characterized by a long main sclerite with a coil (present for example also in many species of the *lunatum* group and, without coil, in many species of *Ocydromus* s.str. and of the *dalmatinum* group), and the external shape, are extremely similar to that of the species of the *lenae* group. I believe that the curious structure mentioned above may have only specific value, and that the contorted main sclerite has more systematic importance. In my opinion *B. polites*, within its own species group, may be included into the subg. *Ocydromus*.

One japanese species of the *lenae* group, *B. gotoense* Habu, 1977, is strictly related to the chinese species *B. peleum* Jedlička, 1933, and to the new *B. schoenmanni* n. sp. Thanks to the kind help of my friend Seiji Morita of Tokyo, I could examine a specimen of *B. gotoense*, unfortunately not completely mature (fig. 54). The study of this specimen and the comparison of the male genitalia of *B. peleum* with the drawing of the median lobe of the aedeagus (Habu 1977) confirm my opinion about the strict relationships with *B. peleum*.

In order to check the validity of the new *B. schoenmanni* n. sp. I compared it with the type specimens of *B. peleum* and *B. nanpingense*. From this comparison it became evident that these taxa are synonyms:

B. nanpingense Kirschenhofer, 1984 (correct name for *B. nanpingensis* Kirschenhofer, 1984) = *B.* (*Ocydromus*) *peleum* Jedlicka, 1933 **n.syn.**

EXAMINED MATERIAL. *B. peleum*: Holotype, ♀, "Tatsienlu, Prov. Setschuan, China Merid." (NMP); 1♂, paratype, "Tatsienlu, Yüling Süd, Szechuan China" (NMP); 1♂; holotype of *B. nanpingense*, "China, Nanping 26° 50'N, 118° 05' E, 17. V. 1935, Eigin Suenson leg." (UZMK); 1♂, paratype of *B. nanpingense*, same date and locality as the holotype of *B. nanpingense*, (NMW); 8♂♂, 6♀♀, China - Shaanxi, Lüeang - 33°07'N, 106°05'E, 22.5-29.5.97 (CF, CKu, CT); 3♂♂, 3♀♀ China (C Sichuan), Qincheng Shan, NW Chengdu, 600 m (river bank), 33.55 N / 103.30 E, 3./4.VI.1997 (CT, CW); 4♂♂, 4♀♀, China Guangxi, 10 km Liuzhou, 160-200 m, (18) 11.11.1993 (NMW, CT); 3♂♂, 3♀♀ China c., Xiexian, 111.6' - 34,8', 20km NE Yuncheng, 25.V.1996 (CS, CT).

B. gotoense: 1♂, Tomie, Fukuejima, Goto is., Nagasaki Pref. Japan, 20.IV.1976 (CM).

B. polites: 5♂♂, Phul Choki, 2000 m, Nepal, 20.IX.1983 (NMB, CS, CT).

Bembidion (Ocydromus) schoenmanni n. sp. (fig. 55)

DIAGNOSIS. A chinese *Ocydromus* of the *lenae* group extremely similar to *B. peleum* with elytra more depressed. Examination of the genitalia is required to distinguish these species; on average, *B. schoenmanni* is of slightly larger size.

TYPE LOCALITY. China: NW Yunnan, ca. 100 km NW Lijang, Hangduanshan, Jiduan - Weixi, Jiduan Ludie, 2200 m.

TYPE SERIES. Holotype, ♂, "China: NW Yunnan, ca. 100 km NW Lijang, Hangduanshan, Jiduan - Weixi, Jiduan Ludie, 2200 m (10), 1.7.1994" (NMW); paratypes: 4♂♂, 4♀♀, same date and locality as the holotype (NMW, CT).

DERIVATIO NOMINIS. Dedicated to my friend Dr. Heinrich Schönmann, curator of the Naturhistorisches Museum, Wien, who kindly gave me the type series to study, and who always helps me in my studies by giving in loan the abundant material preserved in his institution.

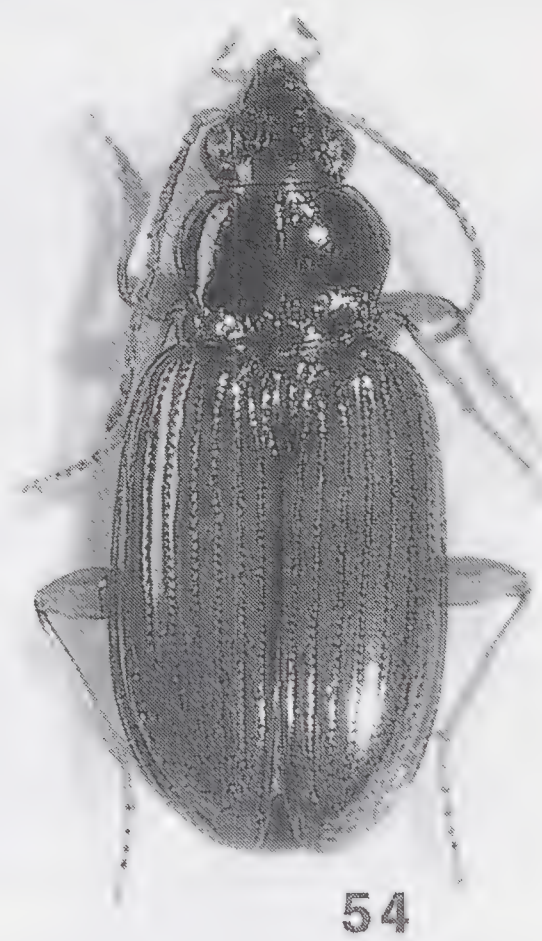
DESCRIPTION. Length 4.52 to 6.00 mm. Black, metallic, with greenish reflections. Antennomere 1 and apical third of antennomere 2 red, apex of antennomere 11 red-brown, rest of antennae piceous. Legs dark brown.

Head with eyes convex, parallel and corrugated frontal furrows, few very fine punctures between eyes, mainly in the posterior part of the front. Antennomeres rather elongate.

Pronotum (pw/pl = 1.31 to 1.32) rather depressed with basal margin slightly oblique at sides. Median line well impressed. Base abundantly punctured between the basal foveae, square, corrugated and not deep. Lateral carina of the hind angle short, but evident.

Elytra (el/ew = 1.53 to 1.55) (ew/pw = 1.45 to 1.59) more depressed than in *B. peleum* Jedlicka, 1933, with square shoulders. Maximum width slightly behind the middle. Striae 1 to 7 well impressed, more superficial in the posterior fourth. Scutellar stria long. Apical stria not deep, joined with stria 5. Intervals flat, except for the first, slightly raised. Discal elytral pores on stria 3, the anterior one at the anterior third, the posterior one at the hind third.

Male genitalia (fig.57). Similar to that of *B. peleum* but with the apex clearly narrower, without the dorsal apical gibbosity. Inner sac slightly protruding from the base. Left



Figs. 53-56. Photographs of the habitus of: 53 - *B. peleum*; 54 - *B. gotoense*; 55 - *B. schoenmanni*; 56 - *B. polites*.

paramere with four setae, right one with three.

DISTRIBUTION (fig. 92). Known only from the type locality in China, Yunnan.

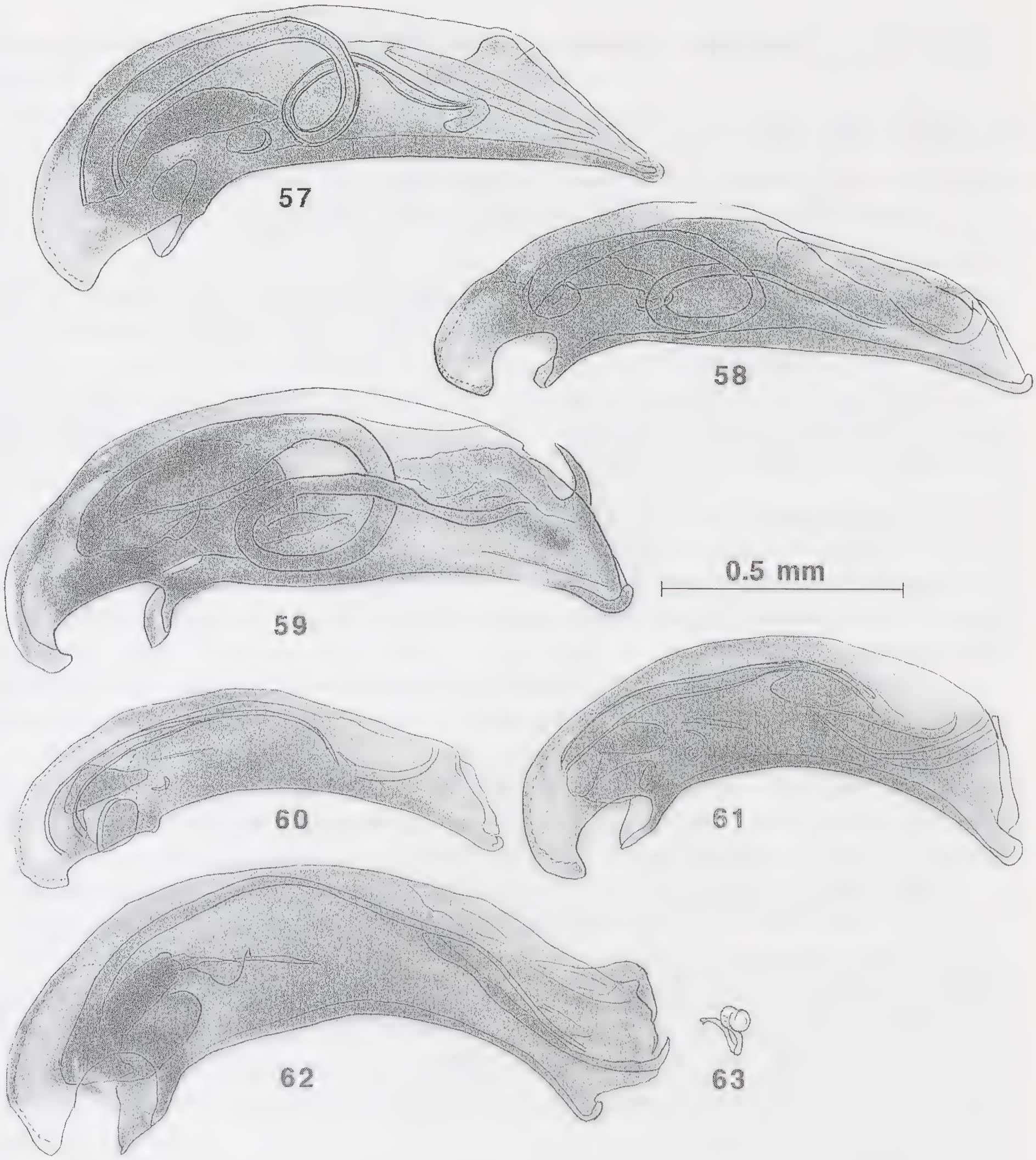
AFFINITIES. Within the *lenae* group certainly more closely related to *B. peleum* Jedlicka, 1933 as indicated by the structure of the body and male genitalia.

Bembidion (*Ocydromus*) gr. *baehri*

DIAGNOSIS. Group of alpine *Ocydromus* species from the southeastern palaearctic region, piceous-brown to black, metallic, characterized by head with eyes flat and rather small, antennae rather short, frontal furrows parallel and superficial, few superficial punctures behind frontal furrows, pronotum rather depressed with basal foveae small, triangular, hind pronotal angles square, without lateral carina, elytra more or less oval, with maximum width behind the middle, humeral angle of elytra rounded, elytral striae more superficial at the apex of elytra, basal margin reaching a point between the beginning of stria 5 and 6, apical stria strongly reduced, or absent with isolated apical pore, isodiametric elytral microsculpture, more or less developed, legs short, inner sac slightly protruding from the basal opening of the median lobe of the aedeagus and spermatheca simple, with "bean shaped" reservoir, long duct slightly sclerotized and without a strongly sclerotized annulus receptaculi.

SYSTEMATIC NOTES. In the subgenus *Ocydromus* sensu Kryzhanovskij et al. (1995) several palaearctic species living on high mountains seem to be related to each other. But to find clear evidence of systematic relationships is sometimes very difficult. The shared characters, such as the depressed elytra, reduced wings (and, therefore, rounded humera), piceous to black color, suggest an evolutionary convergence, since the peculiar environment, cold and windy, with dark soil, can favour matt and dark species that do not fly. Also the flatness of the eyes, rather small, is a character often present in non-flying species. Sometimes, some of these similar species inhabit mountains rather close to each other, and the possibility of systematic relationships is high, as, for example, in the species of the western palaearctic *tauricum* group Müller, 1918 (Maurizio Pavesi, personal communication). Two species give a striking example of convergence. One is *B. alticola* Fiori, 1903, an endemic species of Abruzzo, Italy. In Vigna Taglianti (1993) this species is included in *Ocydromus* subg *Peryphanes* Jeannel, 1941, but probably this species must be included together with *B. reiseri* Apfelbeck, 1902, in a species group within the subgenus *Ocydromus* (Maurizio Pavesi, personal communication). The other species, *B. echarouxi* n. sp. (fig. 61) from Southwestern China, is almost identical to *B. alticola*, differing only by the shorter antennomeres and the median lobe of the aedeagus, with the inner sac slightly protruding from the base. In my opinion a close systematic relationship between these species is unlikely, and the similarity is only matter of convergence.

In all species of the *baehri* group the inner sac of the aedeagus protrudes slightly from the basal opening: this is a character occurring in some species of *Ocydromus* in the *dalmatinum* group, in the *lenae* group, and in the *terminale* group.



Figs. 57-62. Left view of the median lobe of the aedeagus of: 57 - *B. schoenmanni*; 58 - *B. peleum* and 59 - *B. polites*; 60 - *B. baehri*; 61 - *B. echarouxi* and 62 - *B. maddisoni*. Fig. 63: reservoir of spermatheca of *B. echarouxi*.

KEY TO SPECIES

1 - Size smaller (3.56 to 3.74 mm); elytra more parallel; pronotum less sinuate before hind angles; median lobe of aedeagus as in fig. 60 . . . . . .*baehri* n. sp.
- Size larger (4.24 to 4.48 mm); elytra with maximum width clearly behind the middle; pronotum more sinuate before hind angles; median lobe of aedeagus as in fig. 61, 62 2
2 - Elytra wider (el/ew = 1.45 to 1.46), strongly oval; antennae shorter; median lobe of aedeagus as in fig. 61; Sichuan, Qinghai, Tibet . . . . . .*echarouxin.* sp.

- Elytra more elongate (el/ew = 1.50 to 1.53), antennae more elongate; median lobe of aedeagus as in fig. 62; Tibet . . . . . .*maddisoni* n. sp.

B. (Ocydromus) baehri n. sp. (fig. 50)

DIAGNOSIS. An *Ocydromus* of the *baehri* group smaller than the others, with elytral sides almost parallel and relatively narrow median lobe of the aedeagus.

TYPE LOCALITY. Sumdschiling, W. Tibet.

TYPE SERIES. Holotype, ♂, "Sumdschiling, Ebene W. Tibet, Süssw. Tümp, VII/06, Zugm." (ZSM); paratypes: 16 ♂♂, 19 ♀♀, same date and locality as the holotype (ZSM, CBM, CT); 4 ♂♂, 7 ♀♀, "China - N Tibet, Tangula Shan Mts., Tangula Pass, 5100-5300 m, 8.-11.7.1997"(CT).

DERIVATIO NOMINIS. I dedicate this species to my friend Dr. Martin Baehr, curator of the Zoologische Staatssammlung, München, who kindly helps me by trying to teach me how to deal with very large groups, such as the Bembidiini.

DESCRIPTION. Length 3.56 to 3.74 mm. Specimens from the type locality reddish-brown to dark brown with bronze metallic reflections, with reddish brown legs, antennae reddish brown with base of antennomere 3 and 4 red. Specimens from Tangula Shan darker, piceous-black with greenish metallic reflections, with legs and antennae brown to dark brown, base of antennomere 3 and 4 red.

Head with eyes flat and smaller than in the other species of the group, frontal furrows parallel and superficial, few superficial punctures behind frontal furrows. Antennomeres relatively elongate. Legs rather short.

Pronotum (pw/pl = 1.28 to 1.39) rather depressed with basal foveae small, rather deep, triangular, hind pronotal angles square, without lateral carina. Median impression very superficial. Basal transverse impression deeper, with base finely punctate.

Elytra rather parallel and elongate (el/ew = 1.59 to 1.61) with rounded shoulders; maximum elytral width very slightly behind middle. Elytral striae 1 to 7 visible, punctured, stria 7 more superficial, all striae more superficial at apex of elytra, basal margin reaching a point between the beginning of stria 5 and 6; apical stria absent, apical pore isolated. Intervals rather convex. Microsculpture in isodiametric meshes, coarse on the neck, very superficial at the sides of pronotum and rather evident on elytra. As in all species of the *baehri* group, except for *B. echarouxi*, even though the elytral microsculpture is rather evident, the elytra are shiny.

Male genitalia (fig. 60). Median lobe of the aedeagus rather narrow with long main sclerite, ribbon brush strongly sclerotized, and large basal chitin platelet flat, translucent, with strongly cheratinized edges in the ventral part. Basal part of the main sclerite and base of the other mentioned sclerites slightly protruding from the basal opening. Left paramere with four setae, right one with three.

DISTRIBUTION (fig. 92). China: Tibet.

B. (Ocydromus) echarouxi n. sp. (fig. 51)

DIAGNOSIS. A relatively large *Ocydromus* of the *baehri* group with strongly ovate elytra and wide median lobe of the aedeagus.

TYPE LOCALITY. E Tibet "Tuntala Shan" pass, road Markam - Zogang, 2O km NE Zogang, 5000 m, 29°43' N, 98°02' E

TYPE SERIES. Holotype, ♂, "E Tibet, "Tuntala Shan" pass, road Markam - Zogang, 20 km NE Zogang, 5000 m, 29°43'N, 98°02'E, alpine meadow, 30.VI-2.VII.1997" (CT); paratypes: 1♂, 3♀♀, same date and locality as the holotype (CT); 2♀♀, "Ch-NW Sichuan, 31.56 N 98.53 E, 19.7.1995, Chola Shan, alp. meadow, Chola pass 4600 m" (CT); 1♂, 1♀, paratype, "China, E. Qinghai, Nanshan, 7/95" (CE); 5♂♂, 5♀♀, "China, Qinghai prov., 300 km SW Xining, Ngola pass, H=4500-4800 m, 10.VII.1999 (CE, CT); "China - NW Sichuan, 4000 - 4500 m, road Garzé - Barong, pass 25 km 2 Garzé, 8.-10.7.1995" (CF); 2♂♂, 1♀, "CINA - Qinghai m. 4400-4600, from Little Maduo to the south source of Yellow River, 14.VIII.1988" (CS).

DERIVATIO NOMINIS. Dedicated to my friend Dominique Echaroux from Dourdan, France.

DESCRIPTION. Length 4.26 to 4.48 mm. Piceous black with strong bronze reflections (greenish in the paratypes from Sichuan). Antennae piceous black (antennomere 1 red in the paratypes from Sichuan). Legs dark brown to piceous black.

Head as in *B. baehri* but with deeper frontal furrows. Antennomeres rather short and eyes flat, less than in *B. baehri*. Head and pronotum in some specimens rugose.

Pronotum (pw/pl= 1.30 to 1.36). Basal foveae superficial. Hind rectilinear part of the side, before hind angles, shorter than in the other species. Median impression not strongly impressed. Hind angles square, without lateral carina. Basal transverse impression rather superficial. Base rugose and basal foveae rather superficial.

Legs short.

Elytra (el/ew = 1.45 to 1.46) strongly ovate with rounded shoulders and maximum width at the hind third. Apex strongly rounded. Elytral striae 1 to 7 superficial, punctate. Basal margin reaching a point between the beginning of stria 5 and 6; apical stria strongly reduced, almost absent. Intervals flat. Microsculpture in isodiametric meshes, coarse on the neck, superficial on the front in few specimens, very superficial at the sides of the pronotum and evident on elytra. Surface matt alutaceous.

Male genitalia (fig. 61). Median lobe of aedeagus wider than in *B. baehri*, with long main sclerite, ribbon brush strongly sclerotized, and large basal chitin platelet flat, translucent, with strongly cheratinized edges in the ventral part. Basal part of the main sclerite and base of the other mentioned sclerites slightly protruding from the basal opening. Ventral border of the median lobe strongly sclerotized, dark. Left paramere with four setae, right one with three.

Female genitalia (fig. 63). Reservoir of spermatheca "bean shaped", apparently divided in two cavities.

DISTRIBUTION (fig. 92). China: Tibet, Sichuan, Qinghai.

AFFINITIES. See under *B. maddisoni* n. sp.

B. (Ocydromus) maddisoni n. sp. (fig. 52)

DIAGNOSIS. An *Ocydromus* of the *baehri* group, relatively large with elytra rather elongate but with maximum width clearly behind the middle, and wide and large median lobe of the aedeagus.

TYPE LOCALITY. China - N Tibet, Tangula Shan Mts., Tangula Pass, 5100-5300 m.

TYPE SERIES. Holotype, ♂, "China - N Tibet, Tangula Shan Mts., Tangula Pass, 5100-5300 m, 8.-11.7.1997" (CT); 9♂♂, 7♀♀, paratypes, same date and locality as the holotype (CT).

DERIVATIO NOMINIS. Dedicated to my friend Dr. David Maddison, father of the Tree of Life Project, well known bembidiologist and kind reviser of my poor English language.

DESCRIPTION. Length 4.24 to 4.40 mm. Piceous - black metallic with greenish reflections. Legs red-brown. Antennomere 1, base of antennomeres 2 and 3 and apex of antennomere 11 brown, rest of antennae piceous.

Head glossy with very superficial frontal furrows. Few very superficial punctures behind the frontal furrows. Eyes convex as in *B. echarouxi*. Antennomeres slightly more elongate than in *B. echarouxi*.

Pronotum transverse (pw/pl = 1.31 to 1.40), glossy, with basal foveae triangular, deeper than in *B. echarouxi*, median line slightly impressed, basal transverse impression deep, base finely punctate.

Legs rather short.

Elytra (el/ew = 1.50 to 1.53) rather elongate, with maximum width behind middle. Humera rather narrow, rounded, sides of elytra slightly diverging posteriorly, ending in an extremely rounded apex. Striae 1 to 7 evident but rather superficial, ending slightly before apex, intervals flat. Elytra rather shiny, even in the specimens with coarse elytral microsculpture. Microsculpture isodiametric superficial on the neck, very superficial on the sides of the pronotum, and evident on the whole elytra.

Male genitalia (fig. 62). Similar to that of *B. echarouxi*, but with ribbon brush and basal chitin platelet longer, more extended in the direction from the base to apex of the median lobe. Ventral margin of the median lobe less sclerotized than in *B. echarouxi*. Left paramere with four setae, right one with three.

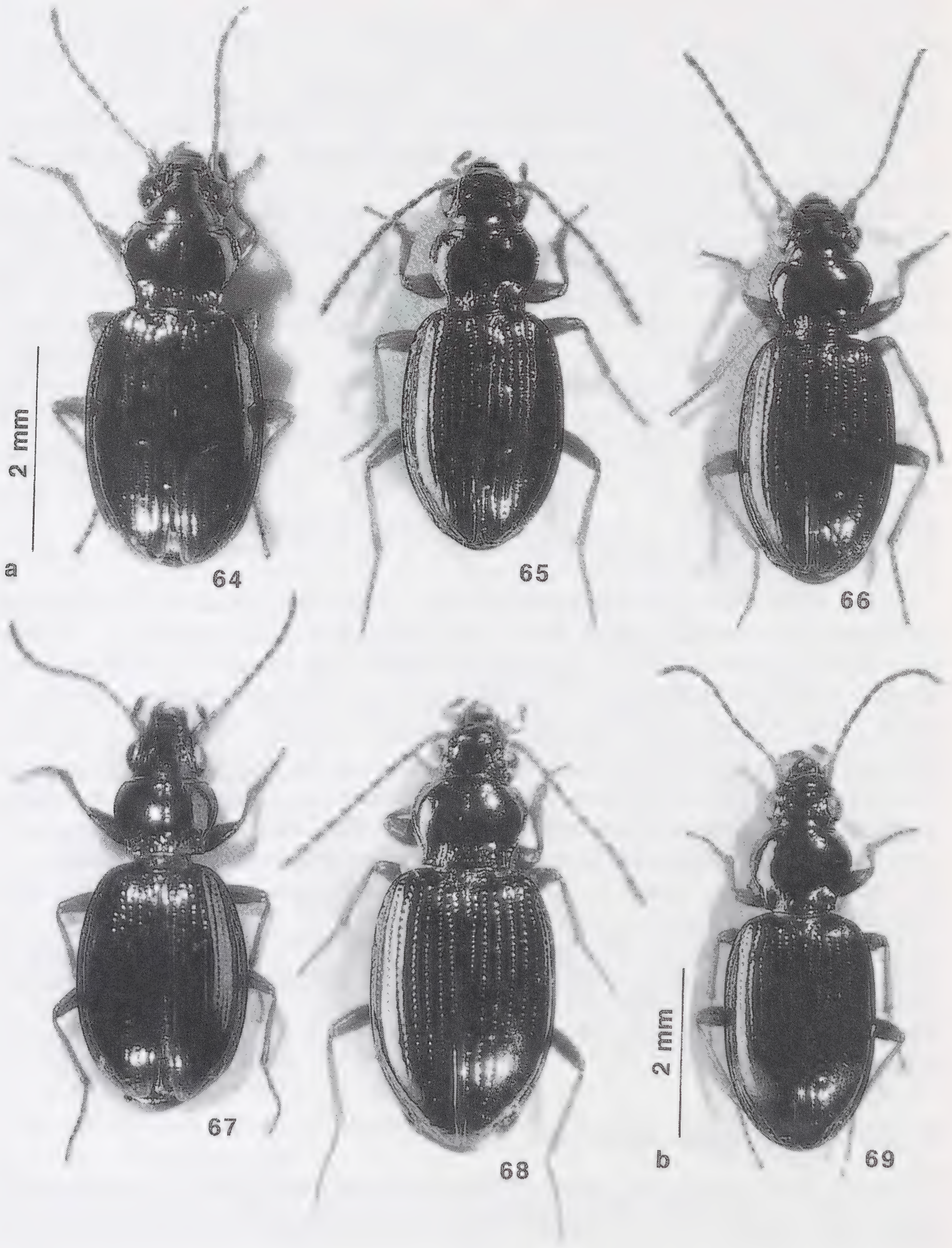
DISTRIBUTION (fig. 92). China: Tibet.

AFFINITIES. Surely stictly related to *B. echarouxi* n. sp. as indicated by the structure of the median lobe of the aedeagus, almost identical, and the general body shape.

Bembidion (*Ocydromus*) gr. *radians*

DIAGNOSIS. Group of oriental species within the subg. *Ocydromus* sensu Kryzhanovskij et al. (1995) characterized by relatively small size (3.60 to 4.72 mm), the metallic integument of head, pronotum and elytra and the absence of a long main sclerite in the median lobe of the edeagus.

SYSTEMATIC NOTES. Andrewes (1935) grouped few species in the *radians* group. As mentioned above, the species groups of Andrewes do not have systematic value. However, some of the species of this group actually are related to each other. Thanks to the courtesy of Dr. Hine, of the Natural History Museum, London, I could study the types of most species of the *radians* group. In my opinion *B. radians* and *B. charon* can be attributed to the subg. *Ocydromus*. While I could observe that *B. endymion* Andrewes, 1935 surely belongs to *Peryphophila* Netolitzky, 1942 (see below), the remaining species (*B. cymindulum* Andrewes, 1930, *B. psuchrum* Andrewes, 1922 and *B. algidum* Andrewes, 1935) need further investigation in order to discover their correct systematic position.



Figs. 64-69. Photographs of the habitus of: 64 - *B. radians*, holotype; 65 - *B. radians puetzi*, holotype; 66 - *B. radians shaanxianum*, holotype; 67 - *B. charon*, holotype; 68 - *B. moritai*, holotype (magnification a); 69 - *B. yunnanum* (magnification b).

KEY TO THE SPECIES OF THE *RADIANS* GROUP SENSU NOVO.

1 - Evident punctures behind frontal furrows; elytra markedly convex, pronotum rather parallel at sides; China (Sichuan) . . . . . *moritai* n. sp.
- Head with or without punctures, elytra less convex and pronotum more sinuate at sides 2
2 - More or less evident punctures behind frontal furrows; pronotum with base slightly larger than the anterior margin, and less convex; elytral striae well punctate; median lobe of the aedeagus more rectilinear (figs. 70, 71) 3
- No punctures behind frontal furrows; pronotum with base slightly narrower than the anterior margin and more convex; striae less impressed; median lobe of the aedeagus more curved ventrally (fig.72); N India . . . . . .*charon* Andrewes, 1926
3 - Elytral microsculpture absent or poorly developed; India, China (Shaanxi) 4
- Elytral microsculpture in fine transverse meshes on the elytra; southwestern China (Sichuan, E Qinghai, Gansu) . . . . . *radians puetzi* n. ssp.
4 - Microsculpture sometimes present, not well developed, upper surface dark bronze, sometimes with greenish reflections; N India . . . . . .*radians radians* Andrewes, 1922
- Microsculpture always absent, upper surface bronze, with lighter shoulders; China (Shaanxi) . . . . . .*radians shaanxianum* n. ssp.

B. (*Ocydromus*) *radians* ssp. *radians* Andrewes, 1922 (fig. 64, 70)

Bembidion radians Andrewes, 1922

This is one of the smallest species of subgenus *Ocydromus*. My attribution of the species to *Ocydromus* is due to the presence of the discal elytral pores almost on stria 3, with basal elytral margin normal, not angulated in respect of the lateral margin, reaching the beginning of stria 5. The character of the punctures behind the frontal furrows is shared by the *Ocydromus* species group sensu Kryzhanovskij et al. (1995). Nevertheless, this character, used in the past for subgeneric diagnosis, is a character often recurring within other species groups of subg. *Ocydromus* (e.g. *lenae* group, *lunatum* group) and outside the subgenus (e.g. *B.* (*Synechostictus*?) *cameroni* Andrewes, 1922, *Bembidion* (*Talanes*) *aspericolle* Germar, 1829, *Bembidion* (*Princidium*) *punctulatum* Drapiez, 1820) and it does not necessarily indicate relationships. The occurrence of this species in China with two new subspecies is reported below.

EXAMINED MATERIAL. Holotype, ♂, "Gopaldhara Sikkim, H. Stevens" (BMNH); 1♂, 1♀, Paratypes "Sikkim, Lachung, H. Stevens" (BMNH); 1♀, North India-West Bengal, Shingalila National Park, Shirikhola, 18.-28.5.1999, 2600m (CT)

AFFINITIES. Surely related to *B. charon* as indicated by the body structure and male genitalia.

B. (Ocydromus) radians puetzi n. ssp. (**fig. 65**)

DIAGNOSIS. A subspecies of *B. radians* differing from the typical form by the presence of more evident elytral microsculpture in fine transverse meshes and by the more depressed elytra.

TYPE LOCALITY. China (W Sichuan), Daxue Shan, Hailuogou Glacier Park (Gongga Shan).

TYPE SERIES. Holotype, ♂, "China (W Sichuan), Daxue Shan, Hailuogou Glacier Park (Gongga Shan) Camp 1. 2100 m, 29.36 N / 102.04 E, 27./28./31.V.97" (CW); paratypes, 1♂, same date and locality as the holotype; 1♂, "China: W-Sichuan: (13), Daxue Shan, Hailuogou Glacier Park (Gongga Shan)

Camp 1. 2100 m, 29.36 N / 102.03 E, 27.-31.V.97" (CSk); 4♂♂, 2♀♀, "China (W Sichuan), Daxue Shan, Hailuogou Glacier Park (Gongga Shan) Camp 2. 2500-2700 m, 29.35 N / 101.02 E, 30./31.V.97" (CW, CT); 1♂, 3♀♀, "China (W Sichuan), Daxue Shan, Hailuogou Glacier Park (Gongga Shan) Camp 2>1. 2500-1940 m, 31.V.1997" (CW); 1♂, "China: W-Sichuan: (13), Daxue Shan, Hailuogou Glacier Park (Gongga Shan) Camp 1. 2100 m, 29.36 N / 102.03 E, 27./28./31.V.97" (CW); 1♀, "China: W-Sichuan (5), Daxue Shan, Mu Ge Cuo, NW Kangding, 30.10.57N, 101.52.09E, 3200-3400 m, 21.05.1997" (CSk); 2♀♀, "China, Sichuan, Daxue Shan, Gongga Shan Mt., Hailougou Glacier Park, env. Glacier Tongue, ca. 3.5 km above Camp. III, ca. 3200 m, 29.V.1997" (CPz); 1♀, "China, Sichuan, Daxue Shan, Gongga Shan Mt. Hailougou Glacier Park, way from Camp II to Camp I, 2620 m-1940 m, 31.V.1997" (CP); 2♂♂, 4♀♀, "China, Sichuan, Daxue Shan, Gongga Shan Mt. Hailougou Glacier Park, env. Camp II, 2650 m, sifted, 30.V.1997" (CPz); 1♂, "China, Sichuan, Ganzi pref., Daxue Shan, 101.57 E, 30.03 N, N Kangding, 2600-2700 m, 22./14.V.1997" (CPz); 1♂, 1♀, "China, Sichuan, Ganzi pref., Daxue Shan, 101.52 E, 30.11 N, Mugecuo ca. 26 km NW Kangding, 3200-3400 m, 21.V.1997" (CPz); 5♂♂, 3♀♀, "China / Sichuan, 103.20 el / 29.30 nw, Mt. Emei 2600 m, 4.-18.V.1989" (NMB, CT); 5♂♂, 7♀♀, "China, pr. Sichuan, Emei Mt. 2500 m, 4.-20.5.1989" (NMB, CT); 2♂♂, "W Sichuan, 2-6.VII.1994, 29.36 N 102.06 E, 1900-2900 m, Gonggashan - Hailuogou" (NMB, CT); 3♂♂, 3♀♀, "W Sichuan, 3-6.VII.1994, 29.35 N 102.00 E, 2900-3200 m, Gonggashan - Hailuogou" (CF, CT); 1♀, "China - S Sichuan, Daliang Shan mts. 9.-11.VI.1998, road Meigu-Leibo vill., pass 15 km NE of Meigu, 28°25'N, 103°17'E" (CT); 2♂♂, 3♀♀, "China, Sichuan 7 July 1993, Mt. Emei, 3100 m, 180 km S of Chengdu" (CT); 1♀ "Cina - W Sichuan, Emei Shan, VII. 1994" (CS); 2♂♂ (*) "China / Sichuan, 103.20 el / 29.30 nw, Mt. Emei 2600 m, 4.-18.V.1989" (NMB, CT); 2♀♀ (*) "China, pr. Sichuan, Emei Mt. 2500 m, 4.-20.5.1989" (NMB); 1♀ (*) "Cina - Sichuan, Bangu - Emei Dh., VII 94 (CS); 8♂♂, 2♀♀, "China S. Sichuan (Ya' an Pref., Shimian Co.) Xiaoxiang Ling pass betw. Shimian Ganluo, 27 km SE Shimian, 29°03N/102°31E, 2450 m, 8.VII.1999" (CW, CT); 1♂, "China W Sichuan (Ganzi Tibet Aut. Pref. Luding Co.), W Erlang Shan Pass, 2600m, 7 km SSE Luding, 29°51N/102°15E, 20-29.VI.1999" (CW); 12♂♂, 2♀♀, "CHINA: S-Sichuan Ya´an Prefecture, Shimian Co. Xiaoxiang Ling, Pass zw. Shimian u. Ganluo, 27 km SE Shimian, 29°03N 102°31E, 2450m, Quellsumpf, Bachufer, 8. VII. 1999" (CW); 2♀♀, "CHINA: W-Sichuan Ya´an Prefecture, Tianquan Co., W Erlang Shan Pass, 2900m, 29.VI.1999, 29.51.13N, 102.17.28E, sifted" (CPz); 1♀, "CHINA: W-Sichuan Aba Tibetan Aut. Pref., Weizhou Co., Qionglai Shan, Wolong valley, 69 km WSW Guanxian, 3500m, 30.53.57N, 102.58.63E, 15.VII.1999, mix forest sifting" (CPz); 1♂, "CHINA: W-Sichuan Ganzi Tibet. Aut. Pref., Kangding Co. Daxue Shan, Mu Ge Cuo, 2 km oberhalb unt. See, 30°11N, 101,52E, Bachufer 5. VII. 1999" (CW); 1♂, "China Quinghai reg. 3500 m, 120 km W of Qinghai Hu, Tianjun 3.-4.7.1990" (CP); 1♂, "China. Gansu, 70 km Wudu, 1800-2600 m, 2.6.'97" (CF); 2♀♀, "China, Gansu, Win Shan range, 70 km N.W. Wudu, 1-VI-97" (CBr); 1♀, "C China W-Sichuan, Luding co., Moxi env., VI 1993, Gongga Shan, 3000 m" (CBl); 3♂♂, 1♀, "China: Sichuan, Gongga Shan, Hailogou, above Camp 3, 29°35N 102°00E, 2800-3300m, 6-8.VII.98" (CMb); 2♂♂ "CHINA: Sichuan 103.20el/29.30nw Mt. Emei 2600 m 4.-18.V.1989, S.&J. Kolibac" (NMB, CSc). The specimens marked with (*) have square shoulders.

DERIVATIO NOMINIS. Dedicated to my friend Andreas Pütz, in whose collection I found some paratypes of this subspecies.

DESCRIPTION. Length 3.68 to 4.28 mm. Metallic dark green, more rarely bronze, legs reddish with knees slightly darkened, antennomere 1 and base of 2, 3, 4 red, rest of antennae piceous.

Head with rather superficial and parallel frontal furrows, not extending to the clypeus; behind them, a few small punctures. Eyes rather convex and antennae rather short.

Pronotum (pw/pl = 1.32 to 1.36) cordate, with base narrower than the anterior mar-

gin. Front angles very slightly more advanced than the anterior margin, rectilinear. Sides strongly curved in the anterior 3/4, then strongly sinuate, with hind fourth, almost rectilinear, forming with the rectilinear basal margin sharp, square hind angles. Front transverse impression evident, median line rather strongly impressed, not reaching the basal margin, basal transverse impression deep, with base coarsely punctate and basal foveae deep, square, punctured, with a laterobasal carina strongly developed.

Metasternal process distinctly bordered. Legs relatively long.

Elytra ovate (el/ew = 1.45 to 1.49) with rounded shoulders (square in few specimens from Emei Shan). Basal margin reaching the beginning of stria 5. Striae coarsely punctate, more superficial toward apex, but normally reaching apex. Only stria 7, more superficial than the others, ending clearly before apex. Scutellar stria long, punctate; apical stria deeply impressed, with apical pore at the middle.

Very superficial microsculpture isodiametric on the neck and in large, slightly transverse meshes on the pronotal sides in some specimens. Elytra with microsculpture in very fine, transverse meshes on the hind half of elytra.

Male genitalia (fig. 71). Identical to the typical form. Parameres with three setae.

Female genitalia (fig. 82). Reservoir of spermatheca "shoe-shaped", apparently divided into two cavities. A faintly sclerotized "bell-shaped" annulus receptaculi.

DISTRIBUTION (fig. 92). China: Sichuan, Gansu.

SYSTEMATIC NOTES. Some specimens of the ssp. *puetzi* from Emei Shan have more developed shoulders. The intraspecific variability of the elytral shape is very high, as in *B.csikii* Jedlicka, 1937 (Toledano & Sciaky, 1998); curiously this great variability is evident in specimens collected on the same mountain as *B. csikii*. The structure of the male genitalia of these specimens is identical to those of the typical form.

B. (Ocydromus) radians shaanxianum n. ssp. (**fig. 66**)

DIAGNOSIS. A chinese subspecies of *B. radians* differing from the ssp. *puetzi* by the absence of elytral microsculpture, and bronze colour with lighter shoulders, and from the typical form by the shoulders paler in colour.

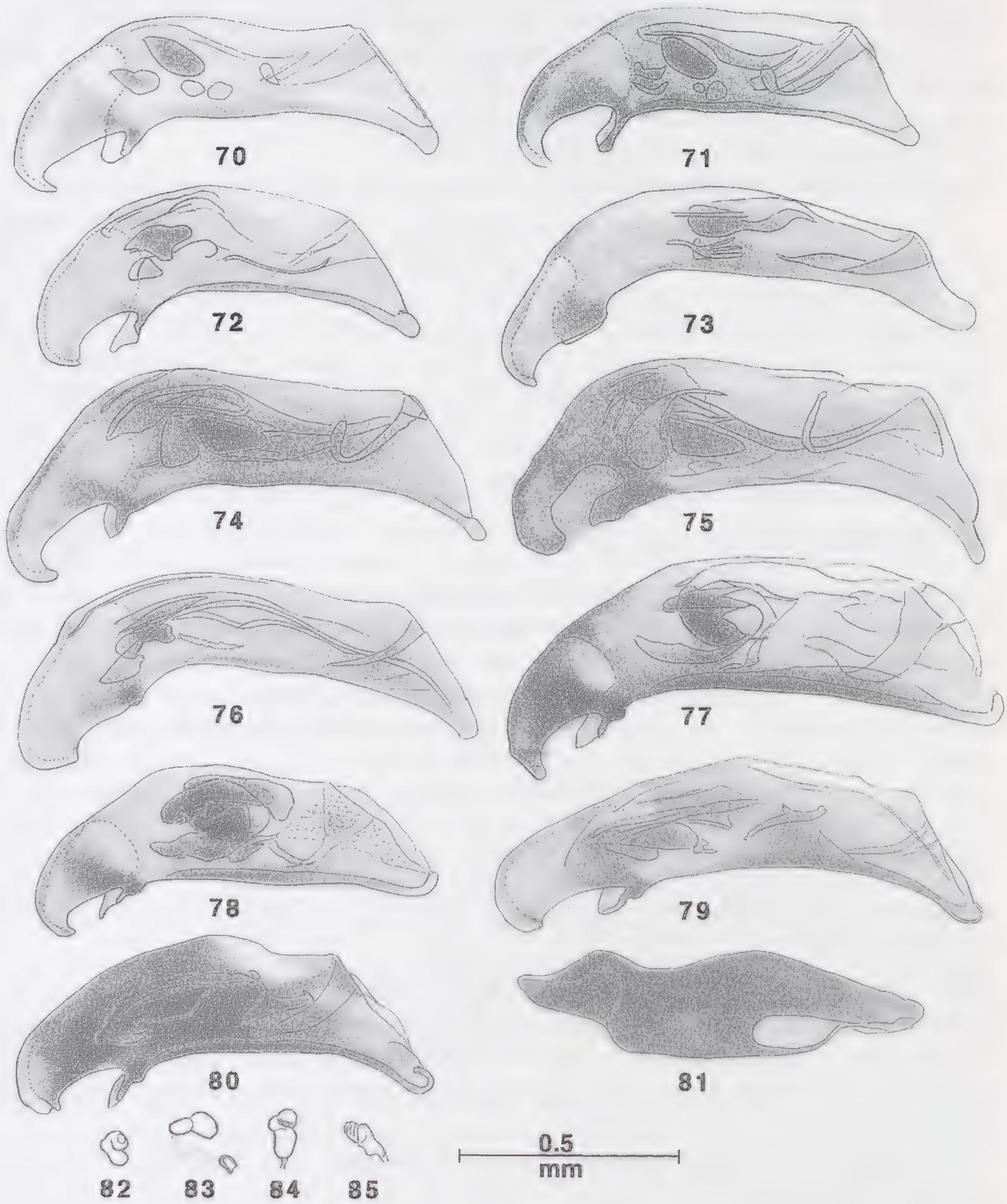
TYPE LOCALITY. China - Shaanxi prov., Qing Ling Shan mts., track Hou Zen Zi vill. to Taibai Shan Mt. 2500 m.

TYPE SERIES. Holotype, ♂, "China - Shaanxi prov., Qing Ling Shan mts., track Hou Zen Zi vill. to Taibai Shan Mt. 2500 m, 27.-29.VI.1998, mixed forest" (CT); paratypes: 1♂, 3♀♀, same date and locality as the holotype; 1♀, "China - Shaanxi, 21-23.VI.1998, Qing Ling Shan mts., road Baoji - Taibai vill., pass 35 km S of Baoji" (CT); 3♂♂, 4♀♀, "China (Shaanxi), Qin Ling Shan 108.47 E, 33.51 N, Mt. W pass autoroute km 70, 47 km S Xian 2500-2600 m, 26-29.VIII.1995" (CW).

DERIVATIO NOMINIS. Derived from the chinese province where the type material was collected.

DISTRIBUTION (fig. 92). China, Shaanxi. Known only from the type locality.

AFFINITIES. Compared with the ssp. *radians* this subspecies has the elytra slightly more depressed, as in the ssp. *puetzi*, and with lighter humera; against ssp. *puetzi* and a few specimens of the typical form it lacks elytral microsculpture. The elytra of *B. radians shaanxianum* are slightly more elongate and parallel than in the two precedingsubspecies. Even though the taxonomical difference is not too evident, the great geographic isolation from the other form normally without microsculpture, the nominotypical form, led me to describe



Figs. 70-80. Left view of the median lobe of the aedeagus of: 70 - *B. radians*, paratype, prep.n. 1894; 71 - *B. radians puetzi*, holotype; 72 - *B. charon*, hololectotype; 73 - *B. moritai*, holotype; 74 - *B. yunnanum*; 75 - *B. niedli,* holotype; 76 - *B. merum*; 77 - *B. cnemidotum*; 78 - *B. misellum*, 79 - *B. muellermotzfeldi*, holotype; 80 - *B. roberti*, paratype. Fig. 81: ventral view of the median lobe of the aedeagus of *B. roberti*, holotype. Figs 82-85: reservoir of the spermatheca of: 82 - *B. radians puetzi*; 83 - *B. moritai*; 84 - *B. roberti*; 85 - *B. muellermotzfeldi*.

this population as a separate subspecies. It is geographically separated from the nominotypical form by the ssp. *puetzi*, clearly distinguishable by the well developed elytral microsculpture, a character rather important for the separation of populations. The male genitalia of *B. radians shaanxianum* are identical to those of the typical form.

B. (*Ocydromus*) *charon* Andrewes, 1926 (fig. 67, 72)

Bembidion charon Andrewes, 1926

This species also belongs to the *radians* group sensu novo. In this species, closely related to *B. radians* as indicated by the habitus and the male genitalia, the punctures on the head are absent: this is another demonstration that is almost impossible to find clear subgeneric divisions among the species of the *Ocydromus* s.l.

EXAMINED MATERIAL. Hololectotype, ♂, "Gori R. Gorge, N. Kumaon, India, 5-9000 ft. H. G. C." (BMNH), 1♀, Paralectotype, "Gori R. Gorge, N. Kumaon, India, 5-9000 ft. H. G. C." (BMNH), 1♀, Paralectotype, "Burphu, Gori V., 11500 ft., India, H. G. C." (BMNH), 3♂♂, 1♀, India bor. Uttar Pradesh bor., Joshimath, Auli, 2800m, 13-17.7.1994 (CT); 1♂, 1♀, India bor. Uttar Pradesh, Badarinath, 4000m, 7.7.1994 (CT); 1♂, 1♀, Nepal, Ghorepani, 3000, Pokhara, X.1971, Morvan (CMk, CT)

B. (Ocydromus) moritai n. sp. (**fig. 68**)

DIAGNOSIS. An *Ocydromus* species of the *radians* group sensu novo, easy to recognize by the markedly convex elytra and the pronotum with sides not too sinuated, and rather square.

TYPE LOCALITY. China (W Sichuan), Daxue Shan, Hailuogou Glacier Park (Gongga Shan).
TYPE SERIES. Holotype, ♂, "China (W Sichuan), Daxue Shan, Hailuogou Glacier Park (Gongga Shan) Camp 1. 2100 m, 29.36 N / 102.04 E, 27./28./31.V.97" (CW); 10♂♂, 5♀♀, same date and locality as the holotype (CW, CT); 1♂, 1♀, "China (W Sichuan), Daxue Shan, Hailuogou Glacier Park (Gongga Shan) Camp 2. 2500-2700 m, 29.35 N / 102.02 E, 30./31.V.97" (CW); 1♂, 3♀♀, "China, Sichuan, Daxue Shan, Gongga Shan, Mt. Hailougou glacier park, 102.04 E, 29.36 N, river valley ca. 1 km above camp I, 2100 m, 28./31.V.1997" (CPz); 1♀, "China, Sichuan prov., 27.VI. - 3. VII. 1991, Liziping env., near Shimian, 200 km SW of Ya'an" (CP); 1♀, "C China S-Sichuan, Emei Shan mt 500-800 m, Baoguo env. VI-1993" (CBl).

DERIVATIO NOMINIS. Dedicated to my friend Seiji Morita of Tokyo, Japan.

DESCRIPTION. Length 4.12 to 4.72 mm. Upper surface metallic green, legs reddish with femura infuscated. Antennomere 1, 2 and base of the antennomeres 3 to 11 reddish brown; rest of antennae darker. Palps red, only penultimate segment of the maxillary palps slightly darker.

Head with normally convex eyes, with some punctures on the front, between the frontal sulci, behind the eyes.

Pronotum (pw/pl = 1.21 to 1.24) less sinuate than in other species of the group. Hind angles with well developed lateral carina. Base abundantly and coarsely punctate, median line rather deep, reaching the basal border.

Metasternal process with a very narrow border.

Elytra short (el/ew = 1.46 to 1.48) (ew/pw = 1.62 to 1.67) with marked shoulders, extremely convex. Striae 1 to 7 coarsely punctate, disappearing near the apical fifth. Apical

stria superficial. Basal border reaching the beginning of stria 5. Discal elytral pores in the third interval, very near stria 3, the anterior at the anterior third, the posterior at the hind third. Microsculpture absent on pronotum and elytra.

Male genitalia. (fig. 73). Median lobe of the aedeagus with base markedly angulate with respect to the body. Apex narrow, smoothed, slightly arcuate dorsally. Parameres with three setae.

Female genitalia (fig. 83). "Pear-shaped" reservoir of spermatheca, with sclerotized, cylindrical annulus receptaculi.

DISTRIBUTION (fig. 92). China, Sichuan.

Bembidion (*Ocydromus*) gr. *modestum*

B. (*Ocydromus*) *yunnanum* Andrewes, 1923 (fig. 69)

B. niedli Jedlicka, 1965 **n.syn.**

SYSTEMATIC NOTES. The comparison of the types of *B.* (*Ocydromus*) *yunnanum* Andrewes, 1923 and *B.* (*Ocydromus*) *niedli* Jedlička, 1965 reveals that they are synonyms. In the holotype of *B. niedli* (median lobe of the aedeagus in fig. 75) the apex of the median lobe of the aedeagus is only slightly more elongate than in the rest of the examined specimens (fig. 74), but this is surely an individual aberration. The diagnostic character used by Jedlicka (1965) does not work: the pronotum, described by Jedlička (1965) as microsculptured in *B. niedli* and without microsculpture in *B. yunnanum*, actually lacks microsculpture in all specimens I could see. Therefore:

B. niedli Jedlička, 1965 = *B. yunnanum* Andrewes, 1923 **n. syn.**

Probably the mistake was due to the fact that the few specimens I could see in Coll. Jedlička (NMP) labelled as *B. yunnanum* had a very dirty pronotum.

This species shows a variable development of the apical elytral spots. In the typical form they are very well developed, as shown in fig. 69. Some specimens from Sichuan I could examine completely lack the apical spots, being completely dark, or have very faint, almost invisible apical spots. The examination of their male genitalia revealed they belonging to *B. yunnanum*.

EXAMINED MATERIAL. 1♂, paratype of *B. yunnanum*:, "Yunnan Fou" (BMNH); 1♀, same locality as the paratype (BMNH); 1♂, same locality as the paratype, "Det. Andrewes" (NMP); 1♀, China merid. provincia Yunnan "det. Jedlicka" (NMP); 1♂, Holotype of *B. niedli*, "Kunmin, China 60, lgt. Kopek" (NMP); 1♂, 5♀♀, paratypes of *B. niedli*, same date and locality as the holotype, (NMP, CP); 4♂♂, 11♀♀, China, Yunnan prov., Heishui 35 km N Lijang, 27.13N, 100.19E, 2.6.-VI.-93 (CF, CT); 12♂♂, 6♀♀, China, Yunnan prov., Heishui 35 km N Lijang, 27.13N, 100.19E, 1-19.VII.1992 (CS, CT, NMW); 3♂♂, 7♀♀, China, Yunnan prov., Heishui 35 km N Lijang, 27.13N, 100.19E, 18.6-4.7-93 (CT); 10♂♂, 9♀♀, China Yunnan, Lugu Lake - Luo Shui, 27.45N, 100.45E, 8.-9.VII.1992 (CBl, CF, CS, CT); 3♂♂, 1♀, China Yunnan, Ninglang env., 27.19N, 100.55E, 6-10.VII.1992 (CS, CT); 2♂♂, 2♀♀, China: NW Yunnan, Yulongxueshan NP, near Baishui, ca. 30 km N Lijang, 2800-3200 m, 7-11.7.1994 (NMW, CT); 2♂♂, 3♀♀, China: NW Yunnan, ca 100 km NW Lijang, Hengduanshan,

Jiduan - Weixi, Jiduan - Ludle, 2200 m, 1.7.1994 (NMW, CT); 2♂♂, 2♀♀, China, Yunnan, Z Xiaguan, 12 km s Weishan, Weibaoshan, 2500-3000 m, 1-17.7.1993 (NMW, CT); 12♂♂, 5♀♀, China - Yunnan prov., 22-27 July 1998, Dali old tower env. (CT); 1♀, China - Yunnan prov., Dali W env., 19.VI.1997 (CT); 2♂♂, China, Kangding m. 2600, Sichuan, 8.VII.1992 (CS); 1♂, Cina - W Sichuan, Kangding 2600 m, 12.VII.92 (CS); 2♂♂, 2♀♀, China - S Sichuan, 27°45' N, 101°13' E, pass 20 km S Muli/Bowa, mixed forest, ca 3500 m, 25.7.1995 (CT); 3♂♂, 1♀, China - S Sichuan, 27°55' N, 101°19' E, 15 km NW Muli (Bowa), mixed forest, cca 3100 m, 30.VI.1998 (CT); 5♂♂, 4♀♀ (*) China - S. Sichuan, Daliang Shan mts., 27. VII. 1997, road Meigu - Leibo, pass 15 Km NE of Meigu, 28°25'N, 103.17'E (CT); 1♂, 1♀ (*) China - S. Sichuan, Daliang Shan mts., 9.-11. VI. 1998, road Meigu - Leibo, pass 15 Km NE of Meigu, 28°25'N, 103.17'E (CT); 3♂♂, 4♀♀ (*) China S. Sichuan, Daliang Shan mts., Zhaojue vill. env. pass Xichang - Meigu vill. 12.-14.VI.1998 (CT); 3♂, 1♀ (*) China, S. Sichuan, 7.VII.1998, 27.38N, 102.48E, 10 km SW Butuo, cultural steppe (CT); 5♂♂, 6♀♀, "China S. Sichuan (Ya' an Pref., Shimian Co.) Xiaoxiang Ling pass betw. Shimian Ganluo, 27 km SE Shimian, 29°03N/102°31E, 2450 m, 8.VII.1999" (CW, CT); 1♂ (*) China - S Sichuan, road Xichang - Yanyuan, pass 15km SW Pingchuan, 27.33N, 101.49E, cca 3200 m, 26-27.VI.1998 (CT); the specimens marked with (*) are completely dark.

Bembidion (*Ocydromus*) gr. *decorum*

B. (*Ocydromus*) *hasurada*, Andrewes, 1924 (fig. 86, 87)

B. merum, Jedlička, 1933

B. kinfushanum Jedlička, 1958 **n.syn.**

SYSTEMATIC NOTES. The chinese *B. merum* Jedlička, 1933 (fig. 86, median lobe of the aedeagus in fig. 76) has been synonymized by Müller Motzfeld (1986b) with the indian *B. hasurada* Andrewes, 1924. In my opinion also *B. kinfushanum* Jedlička, 1958 (fig. 87), from southwestern China, is also a synonym of *B. hasurada*. The type of *B. kinfushanum* seems only be a small specimen of *B. merum* with reduced punctuation behind the frontal furrows and with slightly more rounded humera. These characters, together with the more rounded shoulders and the pronotum slightly more depressed, are the diagnostic characters used by Jedlička (1965) to separate *B. kinfushanum* from *B. merum*. I could examine a large series of specimens with many transitional forms between the two Jedlička taxa. Therefore:

B. kinfushanum Jedlička, 1958 = *B. hasurada* Andrewes, 1924 **n. syn.**

A comparison of indian and chinese specimens of *B. hasurada* reveals that chinese ones more frequently have the shoulders better developed and the dimensions are slightly larger on average.

The placement of *B. hasurada* in the *decorum* group has been noted by Müller-Motzfeld (1986).

EXAMINED MATERIAL. 1♀, N India Kashmir, road to Ladakh, Sonamarg, 6/1995 (CT); 7♂♂, 9♀♂, N India, Himachal Pradesh, Kulu Valley - Manali, 5/1995 (CT); 1♂, Nepal, V.1980, Jumla, Rara Lac, 3000 m (CT); 1♀, Holotype of *B. merum*:, "Tatsienlu, Prov. Sichuan, China Merid." (NMP); 1♀, paratype of *B. merum*:, same locality as the holotype (NMP); 1♀, Holotype of *B. kinfushanum*,

"Szechuan mer., Mts. Kinfushan, 2000 m pr. flum. Sung-Kahno" (NMP); 13♂♂, 4♀♀, China Sichuan, Ganzi pref., Daxue Shan, 101.57 E, 30.33 N, N Kangding, 2600-2700 m, 22/24.V.1997 (CPz, CT); 3♂♂, 3♀♀, Cina - W Sichuan, Kangding 2600 m, 12.VII.1992 (CS, CT); 1♂, Cina - W Sichuan, Mugezo L., 4000 m, 16.VII.92 (CS); 7♂♂, 6♀♀, China (W Sichuan), Daxue Shan, W env. Kanding, 2600-2700 m, 30.03N / 101.57E, 22/24.V.1997 (CW, CT); 1♂, China: W Sichuan (7) Daxue Shan, W Kanding, 30.03.13N, 101.57.44E, 2700-2800 m, 24.05.1997 (CSk); 1♀ China (W Sichuan), Daxue Shan, river valley 5 km E Kanding 2500-2800, 30.03 N / 102.00 E, 20/23.V.1997 (CW): 1♂, China 7.92, Sichuan prov., Kangding (CF); 1♀, China: Sichuan (18) Qingcheng-Shan, NW Chengdu, 600 m, Flussufer, 30.55N, 103.30E, 4.06.1997 (CSk); 1♂, 1♀, China (C Sichuan), Qincheng Shan, NW Chengdu, 600 m (river bank) 33.55 N / 103.30 E, 3/4.VI.1997 (CW); 3♂♂, 1♀, China, Sichuan, 22.6.1993, Dayi Dafeishui Forest, cca 110 km W of Chengdu (CT); 1♂, China Sichuan pr., Liziping, 28.6-3.7.1991 (CW); 1♀ China - S Sichuan, Daliang Shan mts., road Meigu-Leibo vill., pass 15 km NE of Meigu, 28°26'N, 103°17'E, 9-11.VI.1998 (CT); 1♂, 1♀, China (Shaanxi), Qin Ling Shan 110.05 E, 34/27 N, Hue Shan, 118 km E Xian, N valley 1200-1400 m, leafy wd., 18/20.VIII.1995 (CW, CT); 7♂♂, 4♀♀, China W Sichuan (Ya'an Pref. Tianquan Co.) Jiajin Shan, valley below Labahe N. R. St., 54 km W Ya' an, 30°03N/102°27E (brook cleft) 1500 m, 12.VII.1999 (CW, CT); 1♂, China: S-Sichuan, Ya'an Prefecture, Shimian Co., Xiaoxiang Ling, Pass zw. Shimian u. Ganluo, 27 km SE Shimian, 29°03N, 102°31E, 2450m, quellsumpf, Bachufer, 8. VII. 1999 (CW); 1♀, China - Sichuan prov.; Kangding distr. 7.92, Mugeguo lake 4500m (CW).

Bembidion (*Ocydromus*) gr. *cnemidotum*

SYSTEMATIC NOTES. A japanese species, *B.* (*Ocydromus*) *cnemidotum* Bates, 1883 (fig. 88), present also on the Sakalin peninsula and in the Ussuri region, is kept in its own group of species of *Ocydromus* by Kryzhanovskij et al. (1995). The pronotal structure of *B. cnemidotum* is extremely similar to that of *B. yunnanum* Andrewes, 1923, but the structure of the inner sac of the aedeagus is completely different. I have examined a series of specimens of the japanese *B. misellum* Harold, 1877 (fig. 89). This species shares the body structure of *B. cnemidotum*, except for the size, much larger in the latter, and for the structure of the apical pore, isolated in *B. misellum* and on the apical stria in *B. cnemidotum*. But the structure of the inner sac of the aedeagus of both species (figs. 77, 78) is strikingly similar. Therefore I include here *B. misellum* in the *cnemidotum* group. Morita (1994a) showed the similarities in habitus and in male genitalia between *B. cnemidotum* and the japanese *B. kamikochii* Jedlicka, 1965. In the description of the japanese *B. ohkurai* Morita, 1992, the author compared the new species with *B. misellum* because of similar habitus and male genitalia. In my opinion *B. cnemidotum*, *B. misellum*, *B. kamikochii* and *B. ohkurai* belong to the same species group, even though I cannot confirm the placement of the latter since at present I could not examine any specimen belonging to this taxon.

EXAMINED MATERIAL. *B. misellum:* 3♂♂, 3♀♀, Japan, Marunuma, Gunma pref., 22-VI-1982, S. Morita leg. (CM, CT); 4♂♂, 4♀♀, Japan, Hasuike, Nagano pref., 9.6.74 (CE, CT).

B. cnemidotum: 1♂♂, 1♀♀, Japan, Oigawa River, Shizuoka, 25.4.71 (CE, CT); 10♂♂, 7♀♀, S.Sakhalin, Novoalexeevka vill. env., 25-30.05.98 (CT); 1♂, Rossia or. Sakhalin, Krijon, Kalinino env., 4-9.7.1992 (CT).

B. kamikochii: Holotype, ♀, "Kamikochi, Japan Alps, 21.VII.1951" (NMP).

Bembidion (*Ocydromus*) gr. *terminale*
(Bembidion subg. Terminophanes Müller-Motzfeld, 1998)

SYSTEMATIC NOTES. The species of the group of *B. terminale* Heer, 1841 have been included by Müller-Motzfeld (1998) in a new subgenus, *Terminophanes* Müller-Motzfeld, 1998. The characters used by the author to separate the *Terminophanes* species are the absence of punctuation at the pronotal base and, mainly, the presence of a particular sclerite ("tricorned body", Lindroth 1965) in the median lobe of the aedeagus. Even though the species of this group share strict systematic relationships to each other, I prefer to place them into a species group of *Ocydromus* and attribute, at least provisionally, the new species described here to the subg. *Ocydromus*.

B. (Ocydromus) roberti n. sp. (**figs. 90**)

DIAGNOSIS. Very elongate species of the *terminale* group showing flat elytra with shoulders at an obtuse angle, maximum elytral width behind the middle, very long temples, reduced eyes and extremely elongate antennae. The lateral carinae of the pronotal hind angles are present, even though only suggested by a poorly developed process.

In the median lobe of the aedeagus, the lateral right position of the ostium, a character shared with some other species of the group, is here evident for the very large ostium, extended in its apical half.

TYPE LOCALITY. China, Qinghai, Dulan.

TYPE SERIES. Holotype, ♂, "China - Quinghai, Dulan, 10.7.1990" (CS); Paratypes: 2♂♂, 2♀♀, same data and locality of the Holotype (CS, CT); 1♂, "China, Qinghai, Laji Shan range, Chan-Hu villg., VII-97" (CBr); 2♂♂, 3♀♀, "China, Gansu reg. 4200 m, Dogcanglhamo, 12-15.7.1990" (CP, CT).

DERIVATIO NOMINIS. I dedicate this species to my beloved father, Dr. Roberto Toledano, great dentist and astronomer who taught me dentistry and life, by his example, on the occasion of his 76th birthday.

DESCRIPTION. Length 4.20 to 4.56 mm. Head and pronotum dark brown to piceous, elytra reddish - brown to piceous, with faint metallic reflections; in the specimens from Gansu (fig. 95) head, pronotum and elytra darker, piceous - black with greenish metallic reflections; legs red; Antennomere 1 to 3 and base of 4 red, rest of antennae dark brown.

Head with flat and rather small eyes, temples long, antennae elongate, with antennomere 3 and 4 extremely developed, length almost two times antennomere 2. Frontal furrows parallel, uneven, rather deep, reaching the half of the clypeus, rarely exceeding posteriorly the hind third of the eyes.

Pronotum narrow (pw/pl= 1.24 to 1.28) cordate, depressed, with sides strongly sinuate before the hind angles, and with basal margin shorter than the anterior one. Hind angles sharp, laterally prominent. Basal foveae not deep. Lateral carina rudimentary. Base of pronotum rectilinear at middle, very slightly oblique at sides. Base of pronotum about one half of base of elytra. Lateral seta at the anterior 2/5, posterior seta at the hind angle.

Metasternal process rebordered; legs elongate.

Elytra (el/ew = 1.56 to 1.58) (ew/pw = 1.73 to 1.76) with square shoulders, sides almost rectilinear, posteriorly diverging to about the hind 3/5, where the width is maximal,

and then converging, rounded, to the apex. Basal elytral margin ending at beginning of stria 5. Elytral striae punctate, normally impressed on the disk, more superficial at sides, almost disappearing after the posterior 3/5, only stria 1, rarely stria 2 reaching the apex. Apical stria short, not too deep but evident. Stria 7 absent. Posterior discal elytral pore on stria 3, at the posterior 3/4 of elytra. Anterior discal pore on stria 3 at the anterior 2/5 of elytra, visible only in the specimens from Gansu. Microsculpture of elytra and pronotum with isodiametric meshes, extended on the whole surface but superficial, so that the integument is rather shining.

Male genitalia (figs. 80, 81). Ostium of the median lobe of the pronotum very large, opened on the right side of the apex, from the apical extremity, backward to the half of the length. On the right side, about at the anterior third of the median lobe, a little bridge of cheratinized tissue links the ventral with the dorsal margin. Tricorned body strongly developed, its dorsal part dorsally surrounding the apical part of main sclerite, basal end of main sclerite and ribbon brush slightly protruding from the basal opening of the median lobe. Left and right paramere with three setae.

Female genitalia (fig. 84). Spermatheca simple, with reservoir small, "bean shaped", with one main lobe cylindrical and another one, smaller, length one half of the main one, slightly bent with it. A sclerotized annulus receptaculi is not present.

DISTRIBUTION (fig. 92). China: Qinghai, Gansu.

AFFINITIES. The structure of the pronotum of *B. roberti* n. sp. is similar to the typical one of *B.* (*Ocydromus*) of the *terminale* group, even though in *B. roberti* the pronotum is narrower than in other species of the group. Because of the extreme development of the ostium of the median lobe of the aedeagus, I initially planned to describe *B. roberti* as belonging to a new subgenus. I prefer to give to this shape of ostium only a specific value, to prevent any unnecessary further separation within the Bembidiini, even though a relatively independent position of *B. roberti* within the *terminale* group is rather evident also by the habitus of the species.

B. (Ocydromus) muellermotzfeldi n. sp. (**fig. 91**)

DIAGNOSIS. A species of the *terminale* group very similar to *B. mckinleyi* Fall, 1926 and its subspecies, easy to recognize because of paler legs, elytra slightly more convex and the form of male genitalia.

TYPE LOCALITY. China, W Sichuan, 3800 m, road Luhuo-Sertar, 20 km N Luhuo, 31°32'N 100°42'E.

TYPE SERIES. Holotype, ♂, "China, W Sichuan, 3800 m, road Luhuo-Sertar, 20 km N Luhuo, 31°32'N 100°42'E, mixed forest, 21.VII.1997" (CT); paratypes: 2♀♀, same date and locality as the holotype (CT); 1♀, "China, W Sichuan, 4000 m, road Luhuo-Sertar, 40 km N Luhuo, 31°41'N 100°44'E, thuya and picea forest, 23.VI.1997" (CT); 7♂♂, 12♀♀, "China, W Sichuan, (Ganzi Tibet. Aut. Pref. Kangding Co.), Daxue Shan, brook bank W Tsheto La Pass, 3650 m, 20 km W Kangding, 30°04 N/101°46 E, 25. VI. 1999" (CW, CT); 2♂♂, 2♀♀, "CHINA: W-Sichuan Ganzi Tibet. Aut. Pref., Kangding Co. Daxue Shan, Bachufer W Tsheto La Pass, 3650m, 20 km W Kangding, 30°04N, 101°46E, 25. VI. 1999" (CW); 4♂♂, 8♀♀, "E Tibet, road Rawu - Baxoi, pass 10 km N Rawu, 29°38'N 96°43'E, 4300 m, alpine meadow, 12.VII.1997" (CT); 5♂♂, 6♀♀, " E Tibet, Bamda env., 4400 m, 30°15'N, 97°16'E, grassland, 5.VII.1997" (CT); 3♂♂, 3♀♀, "China Gansu reg. 4200 m,

Dogcanglhamo, 12-15.7.1990 (CP, CS, CT); 2♂♂, 2♀♀; "China: W Sichuan, 3500-4300m, Temple 35 km Sabdê, 29°40N 101°20E, 13-14.VII.1998" (CMb).

DERIVATIO NOMINIS. I dedicate this species to Dr. Prof. Müller-Motzfeld, great bembidiologist, who honours me by sending his interesting comments on my works.

DESCRIPTION. Length 5.20 to 5.50 mm. Dark metallic green, shiny. Antennomere 1, 2, base of 3, 4 and apex of 11 red to reddish brown. Rest of antennae piceous. Legs red with femurs slightly infuscated.

Head rather narrow with frontal furrows deep and very slightly converging, extending to clypeus, where they reach the lateral clypeal setae. Front impunctate. Eyes slightly reduced. Antennae elongate.

Pronotum (pw/pl = 1.33 to 1.38) cordiform, with base narrower than the anterior margin, rectilinear, sides rounded, sinuate at the hind fifth, and then slightly diverging, forming with the rectilinear base hind angles that are sharp, acute. Anterior transverse impression shallow. Median line evident, almost reaching basal margin. Basal foveae rather superficial, rugose, without laterobasal carina (present, but extremely rudimentary in few specimens). Lateral seta at the anterior 2/5, posterior seta at the hind angle.

Legs long and sharp. Metasternal process distinctly bordered.

Elytra elongate (el/ew = 1.58 to 1.62) evidently larger than pronotum (ew/pw = 1.64 to 1.66), with maximum width posteriorly to the middle, with square shoulders. Basal margin reaching the beginning of stria 5, striae rather deeply punctate-sulcate, reaching apex, even though more superficial near apex. Stria 7 absent. Scutellar stria punctate, long. Apical stria strongly reduced, superficial and short. Elytral discal pore punctures in interval 3, adjoining stria 3.

Microsculpture superficial, isodiametric on neck, very faint, difficult to see, at the pronotal sides in a few specimens; superficial, but evident, in transverse meshes at the elytral apex.

Male genitalia (fig. 79). Having the typical structure of the group, the "tricorned body" (Lindroth, 1965). The inner sac is slightly protruding from the basal opening of the aedeagus, as in most species of the *terminale* group. Compared with that of *B. mckinleyi*, the median lobe is clearly narrower and without the slight convexity at the ventral margin. Parameres with four setae.

Female genitalia (fig. 85). Reservoir of spermatheca almost identical to *B. roberti*.

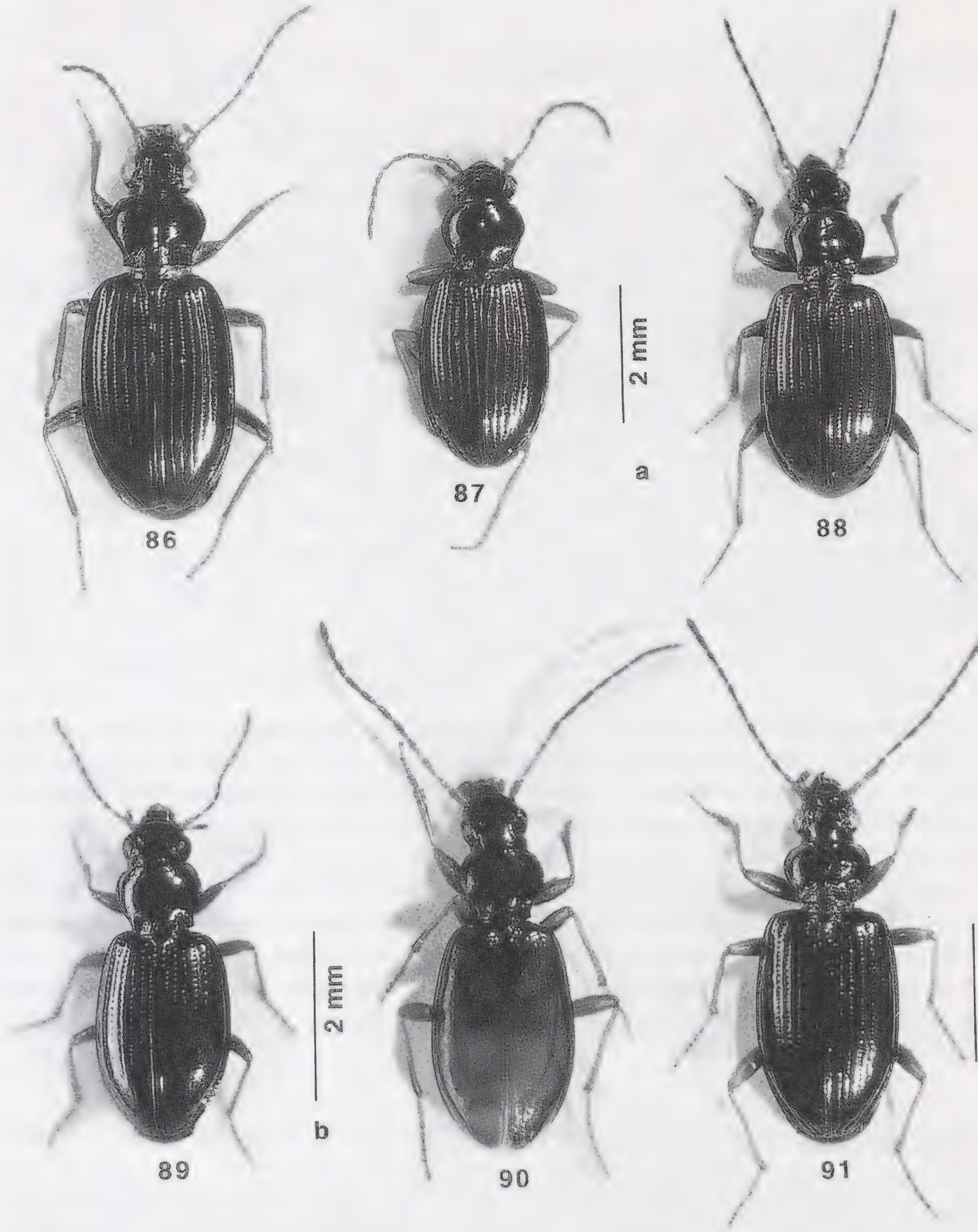
DISTRIBUTION (fig. 92). SW China (W Sichuan, E Tibet)

AFFINITIES. Within the *Terminophanes* group this species seems to be rather closely related to *Bembidion mckinleyi* Fall, 1926, from which it can be easily distinguished for the lighter color of the appendages, the less parallel elytra and the differences in the male genitalia.

Bembidion subg. *Peryphophila* Netolitzky, 1942

B. (*Peryphophila*) *endymion* Andrewes, 1935

I attribute here *B. endymion* to the subg. *Peryphophila* because of general habitus, characterized by large, oval elytra and rather small, depressed pronotum, the unbordered



Figs. 86-91. Photographs of the habitus of: 86 - *B. merum*, holotype; 87 - *B. kinfushanum*, holotype; 88 - *B. cnemidotum*; 89 - *B. misellum*; 90 - *B. roberti*, paratype from Gansu; 91 - *B. muellermotzfeldi,* holotype.

metasternal process and the presence of a slight crista clavicularis at the elytral base. As mentioned above, this is one of the species of the *radians* group sensu Andrewes (1935).

EXAMINED MATERIAL. 1♀, Holotype, "Haldwani Dist., Kumaon, India, H.G.C." (BMNH).

Bembidion subg. *Pseudolimnaeum* Kraatz, 1888

B. (*Pseudolimnaeum*) *arnosti* Nakane, 1978
Bembidion szekessji Jedlička, 1961 nec Fassati, 1955
Bembidion (*Pseudolimnaeum*) *jedlickanum* Toledano, 1999 **n.syn.**

In my revision of the subg. *Bembidion* (Toledano, 1999) I have replaced the preoccupied name *Bembidion szekessji* Jedlička, 1961 with *Bembidion jedlickanum* Toledano, 1999, but it is an junior synonym of *Bembidion arnosti* Nakane, 1978 (Werner Marggi, personal communication). Therefore:

B. (*Pseudolimnaeum*) *jedlickanum* Toledano, 1999 = *B.* (*Pseudolimnaeum*) *arnosti* Nakane, 1978 **n.syn.**

BIOGEOGRAPHICAL NOTES ON THE CHINESE BEMBIDIINI

Many external influences enrich the chinese fauna. Elements of the highlands of Central Asia also live in western China (Xinjang). The fauna of the southwestern China (Yunnan) shows elements in common with the southeastern asian region and northern India.

The siberian fauna clearly exerts its influence in Mongolia, where most species of eastern Siberia are present, and also in the chinese provinces of Nei Mongol and Manchuria. Some japanese species are strictly related to some chinese ones, as, for example *B. gotoense* Habu, 1977, strictly related to the chinese *B. peleum* Jedlička, 1933 and to *B. schoenmanni* n. sp.; also the subgenus *Aureoplataphus* Netolitzky, 1942, considered as monospecific and endemic to Japan, includes also a chinese species, *B. jaechi* n. sp. Some relationships between the nepalese and chinese fauna have been shown by the subgenus *Hoquedela* Müller-Motzfeld, 1988 (Toledano & Sciaky, 1998) and by the genus *Amerizus* Chaudoir, 1868 (Perrault, 1981, 1985; Deuve, 1998); this last, as discovered by Perrault (1981) reveals some relationships also with the northern american fauna. Nonetheless, the species of *Bembidion* of southwestern China are in large part endemic, because of extreme isolation due to the high mountains of this region (Deuve, 1998; Toledano & Sciaky, 1998; Toledano, 1998, 1999).

PROVISIONAL CHECKLIST OF THE CHINESE BEMBIDIINI

Based on my study of the chinese fauna I include this provisional checklist of species at present known from China. It is likely that additional taxa now known from neighboring regions mentioned in the preceding paragraph may also occur in China.

A few species new to China have been identified during the preparation of this work:

Bembidion (*Notaphus*) *obliquum* Sturm, 1825

EXAMINED MATERIAL. 1♂ 2♀♀ China Gansu prov., 120 km SW Lanzhou, Ponggartang, 30.VI.-2.VII.1992 (CS, CT); 1♀ China West Sichuan prov., 60 km S of Hongyuan, ca. 4200 m, 27-29.VI.1991 (CS).

Fig. 92. Map of China showing the distribution of *B. jaechi* (1), *B. schoenmanni* (2), *B. baehri* (3), *B. echarouxi* (4), *B. maddisoni* (5), *B. radians puetzi* (6), *B. radians shaanxianum* (7), *B. moritai* (8), *B. roberti* (9) and *B. muellermotzfeldi* (10).

Bembidion (*Bembidion*) *quadripustulatum* ssp. *quadripustulatum* Serville, 1821

EXAMINED MATERIAL. 1♀, China, Nei Mongol, Wuhai, 8.5.-13.5.1996 (CKu).

Bembidion (*Plataphus*) *gebleri* ssp. *persuasum* Netolitzky, 1938

EXAMINED MATERIAL. 2♂♂, 2♀♀, NE China: Jilin, 30 km NE Baihe City, nr. Hongai, 17.8.1994, 650 m (15) (NMW, CT).

Bembidion (*Bembidionetolitzkya*) *piceocyaneum* Solsky, 1874

EXAMINED MATERIAL. 1♂, 1♀, China, Xinjiang, 2000-3000 m S Slope of Tien Shan mts., road Kuga - Bayanbulak, ca 100 km NNE Kuga, 8-11.V.1993 (CT); 1♂, China occ., 16.-21.7.1991, Tian Shan 2000-3000 m, 70 km Urumqi - Hauxia (CP).

Tribe Bembidiini

gen. *Asaphidion* Gozis, 1886

championi Andrewes, 1924
cupreum Andrewes, 1925
fragile Andrewes, 1925
granulatum Andrewes, 1925
semilucidum Motschulsky, 1862

gen. *Bembidion* Latreille, 1802
subg. *Chinocillenus* Netolitzky; 1942
sinicus Andrewes, 1938
subg. *Desarmatocillenus*, Netolitzky, 1942
foochowensis Lindroth, 1980
subg. *Odontium* Leconte, 1848
aeneipes Bates, 1883
gebieni Netolitzky, 1928
subg. *Bracteon* Bedel, 1879
stenoderum ssp. *mukdense* Kirschenhofer, 1984
velox Linné, 1761
subg. *Eurytrachelus* Motschulsky, 1846
pogonoides Bates, 1883
rufotibiellum Fairmaire, 1888
subg. *Metallina* Motschulsky, 1850
mundatum Netolitzky, 1920
subg. *Neja* Motschulsky, 1864
gansuense Jedlička, 1965
subg. *Philochtemphanes* Netolitzky, 1923
brancuccii **n. sp.**
daliangi **n. sp.**
exquisitum Andrewes, 1923
hansi Jedlička, 1932
perditum Netolitzky, 1920
= *tienmushaniense* Kirschenhofer, 1984 **n.syn.**
? *goetzi* Jedlička, 1965
subg. *Pekinium* Csiki, 1901 (subg. incertae sedis)
chinense Csiki, 1901 (species inquirenda)
subg. *Hoquedela* Müller-Motzfeld, 1988
csikii Jedlička, 1937
subg. *Andrewesa* Netolitkzy, 1931
incisum Andrewes, 1921
subg. *Princidium* Motschulsky, 1864
coreanum Jedlička, 1946
davidi Schuler, 1956
subg. *Notaphus* Stephens, 1829
obliquum Sturm, 1825
semipunctatum ssp. *elegantulum* Sahlberg, 1844
subg. *Notaphocampa* Netolitzky, 1914
niloticum ssp. *batesi* Putzeys, 1875
subg. *Notaphomimus* Netolitzky, 1931
sobrinum Boheman, 1848
subg. *Microsinocys* Toledano, 1998
barkamense Toledano, 1998
daxuense Toledano, 1998
facchinii Toledano, 1998
herbertfranzi Toledano, 1998
jani Toledano, 1998

luhuoense Toledano, 1998
qinghaicum Toledano, 1998
rebeccae Toledano, 1998
schillhammeri Toledano, 1998
schuelkei **n. sp.**
turnai Toledano, 1998
wraseanum Toledano, 1998

subg. *Josefia* n. subg.
belousovi **n. sp.**
luisae **n. sp.**
pieroi **n. sp.**
shugela **n. sp.**
taguense **n. sp.**

subg. *Bembidion* Latreille, 1802
quadrimaculatum ssp. *quadrimaculatum* Linné, 1761
quadrimaculatum ssp. *mandli* Netolitzky, 1932
quadripustulatum ssp. *quadripustulatum* Serville, 1821
sciakyi Toledano, 1999
sciakyi ssp. *luguense* Toledano, 1999
sciakyi ssp. *rinaldi* Toledano, 1999

subg. *Emphanes* Motschulsky, 1850
bulgani Jedlička, 1968
articulatoides Jedlička, 1932
gobiense Jedlička, 1964

subg. *Semicampa* Netolitzky, 1910
mandarin Netolitzky, 1939

subg. *Bembidromus* n. subg.
panda **n. sp.**

subg. *Plataphus* Motschulsky, 1864
asiaticum Jedlička, 1965
hamanense Jedlička, 1933 (subg. *Bembidionetolitzkya*?)
gebleri ssp. *persuasum* Netolitzky, 1938
speciense Jedlička, 1932

subg. *Parataphus* Jedlicka, 1932
heyrovskyi Jedlička, 1932

subg. *Plataphodes* Ganglbauer, 1892
farkaci Toledano & Sciaky, 1998

subg. *Blepharoplataphus* Netolitzky, 1920
davaai Jedlička, 1968

subg. *Trichoplataphus* Netolitzky, 1914
hysteron Netolitzky, 1943
kara Andrewes, 1921
lissonotoides Kirschenhofer, 1989
proteron Netolitzky, 1920
tambra Andrewes, 1923

subg. *Aureoplataphus* Netolitzky, 1942
jaechi **n. sp.**

subg. *Bembidionetolitzkya* Strand, 1929
piceocyaneum Solsky, 1874

subg. *Ocydromus* Clairville, 1806
gr. *tetracolum*
abbreviatum ssp. *uvidum* Andrewes, 1924
andrewesi Jedlička, 1932
babaulti Andrewes, 1924
captivorum Netolitzky, 1943
goetzi Jedlička, 1965
holdhausi Fassati, 1952
insidiosum Solsky, 1874
morawitzi Csiki, 1928
obscurellum ssp. *turanicum* Csiki, 1928
olemartini Kirschenhofer, 1984
poppii ssp. *eugenes* Jedlička, 1933
poppii ssp. *pohlai* Kirschenhofer, 1984
taiyuanense Kirschenhofer, 1984
gr. *lunatum*
collutum Bates, 1873
infuscatum Dejean, 1831
obenbergeri Lutschnik, 1923
ocylum Jedlička, 1933
semiferrugineus Kirschenhofer, 1984
semilunium ssp. *serorum* Netolitzky, 1934
gr. *terminale*
roberti **n. sp.**
muellermotzfeldi **n. sp.**
pseudoconsummatum Kirschenhofer, 1984
gr. *decorum*
hasurada Andrewes, 1924
= *kinfushanum* Jedlička, 1958 **n.syn.**
= *merum* Jedlička, 1933
gr. *saxatile*
saxatile ssp. *fuscomaculatum* Motschulsky, 1844
gr. *modestum*
scopulinum ssp. *thermarum* Motschulsky, 1844
= *thermarum mongolicum* Jedlička, 1965
yunnanum Andrewes, 1923
= *niedli* Jedlička, 1965 **n.syn.**
gr. *parepum*
parepum Jedlička, 1933
gr. *baehri*
baehri **n. sp.**
echarouxi **n. sp.**
maddisoni **n. sp.**
gr. *radians*
radians puetzi **n. ssp.**
radians shaanxianum **n. ssp.**
moritai **n. sp.**
gr. *lenae*
chloreum Bates, 1873

peleum Jedlička, 1933
= *nanpingense* Kirschenhofer, 1984 **n.syn.**
phaedrum Andrewes, 1923
= *purkynei* Jedlička, 1932
schoenmanni **n. sp.**
wutaishanense Kirschenhofer, 1984
incertae sedis
klapperichi Jedlička, 1953
spectans Jedlička, 1933
sterbai Jedlička, 1965
sjoelanderi Jedlička, 1965
vaillanti Schuler, 1955
subg. *Testediolum* Ganglbauer, 1892
gagates Andrewes, 1914
subg. *Pamirium* Netolitzky, 1920
roborovskii Mikhailov, 1988
? subg. *Synechostictus* Motschulsky, 1864
cameroni Andrewes, 1922
exaratum Andrewes, 1924
aeneoviridimicans Netolitzky, 1938

Gen. *Amerizus* Chaudoir, 1868
subg. *Tiruka* Andrewes, 1935
barkamensis Deuve, 1998
baxiensis Deuve, 1998
gongga Deuve, 1998
markamensis Deuve, 1998
mourzinei Deuve, 1998
perraulti Deuve, 1998
queinneci Deuve, 1998
songpanensis Deuve, 1998
turnai Deuve, 1998
wrzecionkoi Deuve, 1998

Conclusions

The systematics of Bembidiini is very far from being settled. The main aim of my research is to reorganize knowledge about the eastern palaearctic fauna, and about the whole complex of world Bembidiini. At present, I prefer to keep the species grouped in very few genera, since in my opinion the homogeneity of the tribe is indubitable. This approach to classification of the Bembidiini often does not allow separation of species into small, easy-to-handle subgenera. Two main groups of subgenera of the Bembidiini include most world species: one is that of species more strictly related to the subg. *Bembidion* s.str. and the other one is that of species more related to the subg. *Ocydromus*. Some authors, following Perrault (1981) upgraded *Ocydromus* to genus, but in my opinion this approach does not help, since in a subgeneric division between the entities placed in Kryzhanovskij et al. (1995) as groups of species of *Ocydromus* is very difficult to find. Moreover, the whole

complex of *Bembidion* loses its homogeneity, which in my opinion is indubitable, especially in light of a new interpretation of some diagnostic characters as above. Since the systematic division of taxa is always arbitrary, I think that the best thing to do is to use the method that lets us work most easily. This is, in my opinion, the classical one, used by the father of taxonomy of Bembidiini, Dr. Fritz Netolitzky. Using his classical informal division in species groups, also the main subgenus, *Ocydromus* Clairville, 1806, huge and in my opinion distributed almost throughout the whole world, can be rather easily studied. In fact, the main problem of the oriental fauna is that several taxa do not belong clearly to the subgenera that in the palaearctic region are very easy to separate from each other. Considering the subgenus *Ocydromus* as a multiform complex of groups of species, we can rather easily find a correct systematic position for the new taxa related to it, and for many others described in the past as *Bembidion* s.l.

ACKNOWLEDGEMENTS.

I wish to thank Dr David Maddison for the linguistic revision of the text, Dr Josef Jelinek of the Narodni Muzeum Praze, Dr Heinrich Schönmann and Dr Manfred Jäch of the Naturhistorisches Museum, Wien, Dr Martin Baehr of the Zoologische Staatssammlung, München, Dr Stuart Hine of the British Museum of Natural History, London, Dr Carlo Pesarini and Mr Maurizio Pavesi of the Museo Civico di Storia Naturale di Milano, Mrs Roberta Salmaso and Dr Leonardo Latella of the Museo Civico di Storia Naturale di Verona, Dr Michael Hansen and Mr Ole Martin of the Universitetes Zoologiske Museum, København and Dr Michel Brancucci of the Naturhistorisches Museum, Basel, for the kind loan of material preserved in their institutions, all the friends that gave me the material of their private collections to study, and my friend Dr Riccardo Sciaky for his constant supervision of my entomological study. As usual, a special thank is due to Rebecca, my invaluable collaborator.

REFERENCES

ANDREWES H.E., 1921 - Notes on oriental Carabidae II. Some new Species of *Bembidium* from Java and Indo-China. The Entomologist's Monthly Magazine ser. 3, 7: 248-252

ANDREWES H.E., 1922a - Notes on oriental Carabidae III. Some new Species of *Bembidium* from the Hymalayas. The Entomologist's Monthly Magazine ser. 3, 8: 174-179

ANDREWES H.E., 1922b - Notes on oriental Carabidae IV. Some new Species of *Bembidium* from the Hymalayas (cont.). The Entomologist's Monthly Magazine ser. 3, 8: 238-242

ANDREWES H.E., 1923 - Notes on oriental Carabidae V. Some new Species of *Bembidium* from the Hymalayas (cont.) and from Yunnan. The Entomologist's Monthly Magazine ser. 3, 9: 95-102

ANDREWES H.E., 1924 - Notes on oriental Carabidae VI. Some further species of *Bembidium* from North India, with notes on others already described. The Entomologist's Monthly Magazine 60: 191-198

ANDREWES H.E., 1927 - Descriptions of some new species of Carabidae from North India. Eos, III: 65-70.

ANDREWES H.E., 1930 - The Carabidae of the third Mount Everest expedition, 1924. Transactions of the Entomological Society of London 78: 1-14

ANDREWES H.E., 1932 - On a Collection of Ground Beetles (Carabidae) from Waziristan. Journal of the Bombay Natural History Society 35 (4): 862-864

ANDREWES H.E., 1935 - The Fauna of British India including Ceylon and Burma. Coleoptera. Carabidae. Vol. II. Harpalinae I, London

ANDREWES H.E., 1936 - Papers on Oriental Carabidae XXX. Annals and Magazine of natural History, Ser.10, 18: 64

ANTOINE M., 1955 - Coléoptères Carabiques du Maroc. Memoires de la Société des Sciences Naturelles et Physiques du Maroc, Nouvelle Série, Zoologie, 1: 122-167.

BELOUSOV I.A. & SOKOLOV I.M., 1996 - Review of the Caucasian Species of the Subgenus *Peryphanes* Jeannel (Coleoptera: Carabidae: *Bembidion*). Stuttgarter Beiträge zur Naturkunde, Serie A (Biologie) 549: 1-40.

DEUVE T., 1998 - Sur la présence du Genre *Amerizus* Chaudoir, sous-genre *Tiruka* Andrewes, en Chine occidentale (Coleoptera, Trechidae). Bulletin de la Société entomologique de France, 105 (1): 37-44

ERWIN T. L. & KAVANAUGH D. H., 1981 - Systematics and zoogeography of *Bembidion* Latreille: I. The *carlhi* and *erasum* groups of western North America (Coleoptera: Carabidae: Bembidiini). Entomologica Scandinavica Supplement, 15: 33-72

HABU A., 1977 - A New *Bembidion* species from the Gotô Islands, Japan (Coleoptera, Carabidae). Entomological Review of Japan 25 (1-2): 9-10, ill.

JEANNEL R., 1941 - Coleoptères Carabiques 1., Faune de France 39, Lechevalier Paris: 471 pp.

JEDLIČKA A., 1965 - Monographie der Tribus Bembidiini aus Ostasien (Col.Carab.). Entomologische Abhandlungen der Staatliches Museum für Tierkunde in Dresden, 32: 79-199.

KORGE H., 1971 - Beitrage zur Kenntnis der Coleopterenfauna Kleinasiens. Annotationes Zoologicae et Botanicae, 67 - 1-68

KRYZHANOVSKIJ O.L., BELOUSOV I.A., KABAK I.I., KATAEV B.M., MAKAROV K.V. & SHILENKOV V.G., 1995 - A Checklist of the Ground-Beetles of Russia and Adjacent Lands (Insecta, Coleoptera, Carabidae). Pensoft Publishers, Sofia-Moscow

LINDROTH C. H., 1963 - The Ground-Beetles (Carabidae, excl. Cicindelinae) of Canada and Alaska, Part 3. Opuscula Entomologica, Supplementum 24: 201-408

LINDROTH C. H., 1976 - Genus *Bembidion* in New Zealand: a revision. New Zealand Journal of Zoology, 3: 161-198

LINDROTH C. H., 1980 - A revisionary study of the taxon *Cillenus* Samouelle, 1819 and related forms (Coeoptera [sic]: Carabidae: Bembidiini). Entomologica Scandinavica, 11: 179-205

LORENZ W., 1998 - Systematic list of Ground Beetles - ed. Lorenz, Tützing, Germany.

MADDISON D., 1993 - Systematics of the holarctic beetle subgenus *Bracteon* and related *Bembidion* (Coleoptera: Carabidae). Bulletin of Museum of Comparative Zoology, 153 (3): 143-299.

MORITA S., 1992 - Notes on the Bembidiinae (Carabidae) of Japan IV. *Bembidion ohkurai* sp. nov. - Entomological Revue of Japan 47 (2): 103-106.

MORITA S., 1994a - Notes on the Bembidiinae (Carabidae) of Japan VIII. *Ocydromus kamikochii* (Jedlicka) - Elytra 22 (2): 221-225.

MORITA S., 1994b - Notes on the Bembidiinae (Carabidae) of Japan IX. Five new species of the Subgenus *Plataphus*. Japanese Journal of Entomology, 64 (2): 255-266.

MÜLLER-MOTZFELD G., 1985 - Bemerkungen zu einigen himalayischen Bembidien. Deutsche Entomologische Zeitung N. F. 32 (1-3): 171-181

MÜLLER-MOTZFELD, G., 1986a - Zur Taxonomie und Phylogenie im *Bembidion*-Subgenus *Ocydromus* Clairville (Col. Carabidae). Entomologische Nachrichten und Berichte 30 (1): 31-40, ill.

MÜLLER-MOTZFELD G., 1986b - Die Gruppe des *Bembidion* (Subgenus: *Ocydromus* Clairv.) *decorum* Zenker (Coleoptera, Carabidae). Deutsche Entomologische Z. (N. F.) 33 (3-5): 137-175

MÜLLER-MOTZFELD G., 1988 - Über himalayische Bembidien (Col. Carabidae). Deutsche Entomologische Z. N. F. 35 4-5: 395-404

MÜLLER-MOTZFELD G., 1998 - Bemerkungen zur Systematik in der Gattung *Bembidion* Latreille, 1802 (Col., Carabidae). Entomologische Nachrichten und Berichte, 42 (1-2): 73-75

NETOLITZKY F., 1942-1943 - Bestimmungstabelle der *Bembidion* -Arten des paläarktischen Gebietes. Koleopterologische Rundschau 28 (1942): 29-68; 28 (1943a): 69-124; 29 (1943b): 1-70.

PERRAULT G. G., 1981 - Études sur la tribu des Bembidiini (Coleoptera, Carabidae) 1. - Notes sur la classification supraspécifique. Nouvelle Revue d'Entomologie, 11 (3): 237-250

PERRAULT G. G., 1985 - Études sur la tribu des Bembidiini s. str. III. Notes sur le sous-genre *Tiruka* Andrewes, et descriptions d'espèces nouvelles (Coleoptera, Carabidae). Nouvelle Revue d'Entomologie (N. S.) 2 (2): 147-157, ill.

SCIAKY R., 1993 - *Sinosteropus*, new subgenus, and three new species of *Pterostichus* from China (Coleoptera, Carabidae, Pterostichinae). "Natura Bresciana", Annali del Museo civico di Storia naturale di Brescia, 29: 193-201.

SCIAKY R., 1994 - Revision of the *Pterostichus* subg. *Morphohaptoderus* and description of ten new species (Coleoptera, Carabidae, Pterostichinae). Koleopterologische Rundschau, Wien, 64: 1-19.

SCIAKY R. & FACCHINI S., 1997 - *Microzargus* new genus from the mountains of Asia and notes on other Licinini (Coleoptera Carabidae). Bollettino della Società Entomologica Italiana, 129 (1): 51-65.

SCIAKY R. & FACCHINI S., 1999 - A review of the Chinese *Loricera,* with description of a new subgenus and three new species (Coleoptera Carabidae Loricerinae). In: A. Zamotajlov & R. Sciaky (eds.): Advances in Carabidology. Papers dedicated to the memory of Prof. Dr. Oleg L. Kryzhanovskij, MUISO publ., Krasnodar, pp. 95-108.

SERRANO J. & GALIAN J., 1996 (1998) - A review of karyotypic evolution and phylogeny of carabid beetles (Coleoptera). Proceedings of a Symposium (28 August, 1996, Florence, Italy) XX International Congress of Entomology; Museo Regionale di Scienze Naturali, Torino: 191-228

TOLEDANO L. & SCIAKY R., 1997 (1998) - Three subgenera of *Bembidion* new to China, with description of a new species (Coleoptera Carabidae). Bollettino del Museo Civico di Storia Naturale di Venezia, 48: 1-18

TOLEDANO L., 1998 - *Microsinocys*, a new subgenus of *Bembidion* Latreille from western and southwestern China (Coleoptera: Carabidae). Koleopterologische Rundschau, 68: 27-45.

TOLEDANO L., 1999 - Revision of the palaearctic species of the subgenus *Bembidion* with description of three new taxa from China (Coleoptera, Carabidae, Bembidiini). In: A. Zamotajlov & R. Sciaky (eds.): Advances in Carabidology. Papers dedicated to the memory of Prof. Dr. Oleg L. Kryzhanovskij, MUISO publ., Krasnodar, pp. 195-227.

VIGNA TAGLIANTI A., 1993 - Checklist delle specie della Fauna d'Italia. Coleoptera Archostemata, Adephaga 1 (Carabidae). Edizioni Calderini, Bologna: 1-51

VIGNA TAGLIANTI A., 1994 (1995) - Un nuovo *Ocys* dell'Appennino Abruzzese (Coleoptera, Carabidae). Bollettino dell'Associazione Romana di Entomologia, 49 (3-4): 129-136

Indirizzo dell'Autore:

L. Toledano, Museo Civico di Storia Naturale, Lungadige Porta Vittoria 9, I-37129 Verona, Italy. e-mail: lucatole@iol.it

Mem. Soc. entom. ital., 78 (1): 71-129. *30 aprile 2000*

Davide SASSI & Seniz KISMALI

The Cryptocephalinae of Turkey, with Informations on their Distribution and Ecology (Coleoptera Chrysomelidae)

Abstract - 91 species of Cryptocephalinae of Turkey are listed, on the basis of personal observations and review of literature. For the first time keys are presented for the identification of genera and species from the territory under study. General and local distribution of species, as well biological notes and synonyms are reported. *Cryptocephalus paphlagonius*, new to the science, is described. *C. trapezensis* Tappes, 1871 is synonymized with *C. cribratus* Suffrian, 1847; *C. bodemeyeri* Weise, 1900 is synonymized with *C. moehringi* Weise, 1884; *C. karsantianus* Pic, 1914 is synonymized with *C. variceps* Weise, 1884. Lectotypes of *C. araxidis* Weise, 1898; *C. bodemeyeri* Weise, 1900; *C. karsantianus* Pic, 1914; *C. moehringi* Weise, 1884; *C. sultani* Pic, 1920; *C. virens* Suffrian, 1847; *Pachybrachys misellus* (Weise, 1900) and *P. pentheri* Ganglbauer, 1905 are designated. Neotype of *Cryptocephalus trapezensis* Tappes, 1871 is designated. *C. pelleti* Marseul, 1875 and *C. volkovitshi* Lopatin, 1976 are newly recorded from the country. Male genitalia of the following species are figured for the first time: *Cryptocephalus curda* Jacobson, 1897; *C. moehringi* Weise, 1884; *C. lederi* Weise, 1889; *C. peyroni* Marseul, 1875; *C. sultani* Pic, 1920; *C. tappesi* Marseul, 1868; *C. wehnkei* Weise, 1882; *Pachybrachis laticollis* (Suffrian, 1860); *P. pentheri* Ganglbauer, 1905. Lastly, *P. mardinensis* (Weise, 1900) and *P. tessellatus* ssp. *orientalis* (Weise, 1894) are newly recorded from Lebanon. *P. mardinensis* is also newly recorded from Syria and Israel.

Riassunto - *Le Criptocefaline di Turchia, con informazioni sulla loro distribuzione ed ecologia.* Il lavoro riassume le conoscenze attuali sulla distribuzione delle 91 specie di Coleoptera Chrysomelidae Cryptocephalinae attualmente note per la Turchia. L'elenco delle presenze è redatto sulla base di materiale inedito e su una revisione critica dei dati reperiti in letteratura. Il catalogo riporta la distribuzione generale e locale delle specie trattate, oltre a note biologiche e sinonimiche. Per la prima volta vengono compilate chiavi di identificazione per il territorio in esame. Viene descritto *Cryptocephalus paphlagonius* n. sp. *C. trapezensis* Tappes, 1871 è posto in sinonimia di *C. lus cribratus* Suffrian, 1847; *C. bodemeyeri* Weise, 1900 è posto in sinonimia di *C. moehringi* Weise, 1884; *C. karsantianus* Pic, 1914 è posto in sinonimia di *C. variceps* Weise, 1884. Sono designati i lectotipi delle seguenti specie: *C. araxidis* Weise, 1898; *C. bodemeyeri* Weise, 1900; *C. karsantianus* Pic, 1914; *C. moehringi* Weise, 1884; *C. sultani* Pic, 1920; *C. virens* Suffrian, 1847; *Pachybrachys misellus* (Weise, 1900) e *P. pentheri* Ganglbauer, 1905. Viene designato il neotipo di *Cryptocephalus trapezensis* Tappes, 1871. *C. pelleti* Marseul, 1875 e *C. volkovitshi* Lopatin, 1976 sono nuovi per la fauna di Turchia. I genitali maschili delle seguenti specie vengono raffigurati per la prima volta: *C. curda* Jacobson, 1897; *C. moehringi* Weise, 1884; *C. lederi* Weise, 1889; *C. peyroni* Marseul, 1875; *C. sultani* Pic, 1920; *C. tappesi* Marseul, 1868; *C. wehnkei* Weise, 1882; *Pachybrachis laticollis* (Suffrian, 1860); *P. pentheri* Ganglbauer, 1905. Infine, *P. mardinensis* (Weise, 1900) e *P. tessellatus* ssp. *orientalis* (Weise, 1894) sono per la prima volta segnalati per il territorio del Libano. *P. mardinensis* è nuovo anche per la Siria e Israele.

Key words: Cryptocephalinae, Turkey, faunistics, new species, synonymy.

INTRODUCTION

Cryptocephalinae constitute an important subfamily of Chrysomelidae, distributed throughout the world and distinguished by a combination of the following basic features: body short and oval, small to moderate in size, rounded or obtuse at ends; head is vertical and hidden by the pronotum, eyes are often emarginate on the inner rim, antennae are thin and filiform, pygidium is large and for most part is not covered by elytral surface. Chromatic pattern often includes gaudy colours or metallic iridescence, at least in the genus *Cryptocephalus*. External features are often very similar in different species and chromatic pattern can vary a lot within the same taxon, so the correct identification can require the analysis of male genital characteristics (aedeagus). On the contrary, female genitalia are of little value for taxonomic purposes, according to the present knowledge.

Adults are phytophagous and feed on flowers or leaves of a wide range of herbaceous and arboreous plants, belonging to 64 different families (Jolivet, 1988). Most of them are polyphagous, generally feeding on Dicotyledones; several species are reported as pests of wild or cultivated plants. The common reaction to disturbance is the "drop-off reflex", followed by a period of thanatosis on the ground.

Feedings habits of larvae are very poorly known. They generally live included in a case constructed with faecal matter, hidden on soil surface or under dry leaves. Some of them are myrmecophilous, but most are saprophagous, or free living on leaves.

According to our data, there are about 500 described species of Chryptocephalinae in the Palearctic region, belonging to six genera, three of which are reported from Turkey and represented by 91 species, at the present time.

Turkish species have never been studied systematically, although several data and descriptions of new taxa were published in several papers (see Literature cited).

In the present work, specimens of most Turkish species have been studied and a list of all known species is given, with taxonomic and biological information. For the first time, an identification key is published for the territory under study.

LIST OF THE SPECIES

We have examined specimens from the following collections:

CMAL: coll. Malmusi, Modena, Italy. CSAL: coll. Saltini, Modena, Italy. HK: coll. Kippenberg, Herzogenaurach, Germany. DE: coll. Erber, Giessen, Germany. ZMH: Zoologiska Museet, Helsingfors Universitet, Finland. JB: coll. Bezdek, Brno, Czech Republic. FK: coll. Kantner, Ceske Budejovice, Czech Republic. MV: Museo civico di Storia naturale, Verona, Italy. MM: Museo civico di Storia naturale, Milano, Italy. MZ: coll. Zuber, Kosmonosy, Czech Republic. MNHG: Muséum d'Histoire naturelle, Geneva, Suisse. SZ: coll. Zoia, Milano. Italy. USR: Dipartimento di Biologia Animale e dell'Uomo, Università "La Sapienza", Rome, Italy. Coll. Weise (housed in Museum für Naturkunde der Humboldt-Universität, Berlin). Coll. Pic (housed in Muséum national d'Histoire naturelle, Paris). Coll. Kraatz (housed in Deutsches Entomologisches Institut, Eberswalde). Coll. Ganglbauer (housed in Naturhistorisches Museum, Wien). Coll. Suffrian (housed in Martin-Luther-Universität, Halle).

Lack of abbreviation means that specimens are kept in authors' collections.

The species within subgenera are arranged in alphabetical order, as phylogenetic relationships are very poorly known at present. Unfortunately feedings habits and other biological information are unknown for almost all the endemic species.

Stylosomus (Stylosomus) flavus Marseul, 1875

Stylosomus Flavus Marseul, 1875: 295.

TERRA TYPICA: Greece.

GENERAL DISTRIBUTION: Greece; Bulgaria; Caucasus; Turkey.

DISTRIBUTION IN TURKEY: Erzurum; Kastamonu; Van (1800m).

MATERIAL EXAMINED: Ankara, Beypazari, 10.7.1979, 1 spec.; Artvin, Çoruh neheri K., 8.9.1871, 5 specs.; Artvin, Borcka - Artvin, Çoruh nehri, 200m, 8.6.86, 1 spec., (MNHG); Kars, Kagizman, Aras nehri, 1200m, 18.6.86, 4 specs., (MNHG); Kars, 20 Km E Kagizman, 1150m, 18.6.86, 3 specs., (MNHG).

BIOLOGICAL NOTES: Beetles feed on *Tamarix* spp.

SOURCES: Tomov, 1984; Warchalowski, 1991; Aslan & Özbek, 1998.

Stylosomus (Stylosomus) subelongatus Pic, 1913

Stylosomus subelongatus Pic, 1913: 179.

LOCUS TYPICUS: Damascus (Syria).

GENERAL DISTRIBUTION: Syria; Israel; Turkey.

DISTRIBUTION IN TURKEY: Gümüshane.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: It has been collected on *Tamarix* spp.

SOURCES: Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997a, 1997b.

Stylosomus (Stylosomus) tamaricis (Herrich-Schaeffer, 1838)

Cryptocephalus tamaricis Herrich-Schaeffer, 1838: 143.

TERRA TYPICA: not reported.

GENERAL DISTRIBUTION: Southern Europe; Ukraine; Caucasus; Syria; Israel; Central Asia; Northern Africa; Turkey.

DISTRIBUTION IN TURKEY: Erzurum; Denizli.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: This species is collected on *Tamarix* and *Myricaria*.

SOURCES: Sahlberg, 1913; Ogul, 1970; Medvedev & Roginskaia, 1988; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Pachybrachis (Pachybrachis) adaliensis (Weise, 1886)

Pachybrachys adaliensis Weise, 1886: 25.

LOCUS TYPICUS: Antalya (= Adalia, TR).

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: Antalya.

MATERIAL EXAMINED: We examined the single spec. in Weise's collection. It is a female, labelled

as follows: Adalia Korb (handwritten, white label) / 5.1886 (handwritten, white label) / *adaliensis* m. (handwritten, white label) / Typus (printed, red label) / Zool. Mus. Berlin (printed, white label) / *Pachybrachis adaliensis* Wse (handwritten) / L.N. Medvedev det. 1987 (printed). In the original description Weise reported von Heyden as collector of the spec.(s), so the spec. in question would not belong to the type series.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Weise, 1886.

Pachybrachis (Pachybrachis) albicans (Weise, 1882)

Pachybrachys albicans Weise, 1882: 248 (note).

LOCUS TYPICUS: Kasumkent (near Derbent, Caucasus).

GENERAL DISTRIBUTION: Transcaucasus; Turkey.

DISTRIBUTION IN TURKEY: Artvin; Erzurum.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: It feeds on *Salix* and *Tamarix*.

SOURCES: Medvedev & Roginskaia, 1988; Warchalowski, 1998.

Pachybrachis (Pachybrachis) anatolicus Lopatin, 1985

Pachybrachis anatolicus, Lopatin, 1985: 768.

LOCUS TYPICUS: Baskale (Van, Turkey).

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: Van.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: No data were found in the literature.

Pachybrachis (Pachybrachis) bodemeyeri (Weise, 1906)

Pachybrachys Bodemeyeri Weise, 1906: 472.

LOCUS TYPICUS: Bilecik (Turkey).

GENERAL DISTRIBUTION: endemic species from Turkey.

DISTRIBUTION IN TURKEY: Bilecik; Erzurum.

MATERIAL EXAMINED: "Turchia", 2 specs., (MV).

BIOLOGICAL NOTES: Collected on *Quercus* spp. (Bodemeyer, 1906) and *Salix* spp. (Aslan & Özbek, 1997).

SOURCES: Bodemeyer, 1906; Aslan & Özbek, 1997; Warchalowski, 1998.

Pachybrachis (Pachybrachis) excisus (Weise, 1897)

Pachybrachys excisus Weise, 1897: 66.

LOCUS TYPICUS: Ankara.

GENERAL DISTRIBUTION: Bulgaria; Syria; Turkey.

DISTRIBUTION IN TURKEY: Ankara; Antalya.

MATERIAL EXAMINED: Kirklareli,Vize, 25.7.1973, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Gruev & Tomov, 1979; Gruev & Tomov, 1984; Warchalowski, 1991.

Pachybrachis (Pachybrachis) fimbriolatus ssp. *mendax* (Suffrian, 1860)

Pachybrachys mendax Suffrian, 1860: 60.

TERRA TYPICA: not reported.

SYNONYMS: *Pachybrachis probus* (Weise, 1882); *Pachybrachis nitidicollis* (Weise, 1894); *Pachybrachis dissecticeps* (Roubal, 1916).

TAXONOMICS REMARKS: *Pachybrachis fimbriolatus* is a variable taxon with large distribution in Palearctic region, and early authors described several related forms whose systematic status is not yet clarified up to today. According to the most recent authors, specimens from Eastern Europe, Middle Asia and Caucasus might be considered belonging to one (*probus*: Warchalovski, 1991) or two (*probus* and *nitidicollis*: Burlini, 1968) different taxa, characterized by broader body, more extended yellow pattern, finer and sparser punctures on pronotum, and slight differences on the shape of aedeagus. Lopatin (1977) considered at first the *probus* and *nitidicollis* forms as synonyms of the nominal form, but afterwards (1991) he proposed *P. probus* as a separate species and the ancient name *P. mendax* Suffrian as senjor synomym of *P. probus*. Waiting for further clarifying information, we provisionally assign all Turkish specimens to a single taxon occurring in the oriental part of the range of *Pachybrachis fimbriolatus*.

GENERAL DISTRIBUTION: The real distribution of this subspecies needs further evaluation. It has been reported from Moldova; Ukraine; Caucasus; Iran; Central Asia; Southern Russia; Siberia; Mongolia; Turkey.

DISTRIBUTION IN TURKEY: Ankara; Bayburt; Bulgar Maden; Çankiri; Denizli; Erzican; Erzurum; Gümüshane; Kars, Sivas; Van (2100m).

MATERIAL EXAMINED: Afyon, 1020m, 6.6.1986, 6 specimens; Aksaray, 24.5.61, 1 spec., (MV); Ankara, Beytepe, 30.5.1978, 2 specs.; Ankara, 5-30 Km south of Kirikkale, 1000m, 4.7.1987, 1 spec., (MNUR); Bilecik, Pazaryeri, 25.5.1971, 1 spec.; Bingöl, Kuruca geçidi, 1500-1800m, 24.5.1988, 1 spec.; Bitlis, Karasu çayl., 10 Km W Güroymak, 28.6.1992, 2 specs.; Diyarbakir, Lice, 12.6.1976, 1 spec.; Erzincan, 16.6.1973, 1 spec.; Erzincan, 16.6.1973, 2 specs.; Erzincan, Tercan, 16.6.1973, 1 spec.; Erzincan, Tercan, 1400-1500m, 15.6.1986, 2 specs., (MNUR); Erzincan, Kizildag geçidi, 2150m, 11.7.1975, 1 spec., (MNUR); Erzurum, between Erzurum and Pasinler, 1900m, 7.7.1987, 2 specs., (MNUR); Eskisehir, Hamidiye, 17.5.1979, 2 specs.; Gümüshane, Maden, Kop Dag geçidi, 1700-2300m, 12.7.1987, 3 specs.; Gümüshane, Maden-Bayburt, 1300-1800m, 16.6.1986, 1 spec.; Istanbul, Beyazit, 12.7.1974, 1 spec.; Konya, Sultan Mts, legit Bodemeyer, 2 specs., (MV); Manisa, Bakir, 11.6.1976, 1 spec.; Sivas, Vassibei geçidi, 1450m, 4.7.1987, 1 spec., (MNUR); Tunceli, 1100m, 15.6.1986, 1 spec., (MNUR).

BIOLOGICAL NOTES: Mesophilous and oligophagous species, associated with herbaceous plants belonging to Fabaceae (*Onobrychis*). Also nominal form has been collected on Fabaceae. Some examined specimens might have been collected on *Humulus lupulus* and on *Salix* sp., according to label data.

SOURCES: Suffrian, 1860; Escherich, 1897; Bodemeyer, 1900; Sahlberg, 1913; Burlini, 1968; Ogul, 1970; Lopatin, 1977, 1991; Gruev & Tomov, 1979; Tomov, 1984; Aslan & Özbek, 1997; Aslan & Özbek, 1998.

Pachybrachis (Pachybrachis) glycyrrhizae (Olivier, 1808)

Cryptocephalus glycyrrhizae Olivier, 1808: 838.

LOCUS TYPICUS: Baghdad (Iraq).

GENERAL DISTRIBUTION: Transcaucasus; Syria; Lebanon; Israel; Jordan; Iraq; Iran; Central Asia; Egypt; Afghanistan; Turkey.

DISTRIBUTION IN TURKEY: Kars.

MATERIAL EXAMINED: Gaziantep, 3.6.1972, 1 spec.; Urfa, Haran, 15.6.1972, 2 specs.

BIOLOGICAL NOTES: Probably xerophilous species, associated with the tree layer. It has been collected on *Quercus* spp., according to Lopatin & Chikanutov (1997); also feeding on *Glycyrrhiza* according to Medvedev & Roginskaia (1998).

SOURCES: Berti & Rapilly, 1973; Medvedev & Roginskaia, 1988; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997a, 1997b.

Pachybrachis (Pachybrachis) hieroglyphicus (Laicharting, 1781)

Cryptocephalus hieroglyphicus Laicharting, 1781: 182.

TERRA TYPICA: Tyrol.

SYNONYMS: *Pachybrachis tristis* (Laicharting, 1781); *Pachybrachis histrio* (Fabricius, 1781); *Pachybrachis atomarius* (Gebler, 1830); *Pachybrachis pseudoscriptus* Wagner, 1927.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus, Central Asia; Western Siberia; Northern Africa; Turkey.

DISTRIBUTION IN TURKEY: Bilecik; Konya.

MATERIAL EXAMINED: Sivas, Gürün, 19.6.1978, 1 spec.; Sivas, 10.6.1978, 2 specs.; Sivas, 18.6.1970, 1 spec.

BIOLOGICAL NOTES: Hygrophilous species, associated with the tree layer; polyphagous, it feeds on Salicaceae and Betulaceae.

SOURCES: Bodemeyer, 1906; Burlini, 1968; Ogul, 1970; Mohr, 1977; Lopatin, 1977; Gruev & Tomov, 1984; Warchalowski, 1991, 1998.

Pachybrachis (Pachybrachis) humeralis Burlini, 1956

Pachybrachis humeralis Burlini, 1956: 86.

LOCUS TYPICUS: Bilecik.

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: Bilecik.

MATERIAL EXAMINED: Karaköse, Tasliçay, 6.8.1977, 1 spec.; Kastamonu, 20.6.1974, 1 spec. (uncertain determination on a single female).

SYSTEMATIC REMARKS: described by Burlini from a couple of specimens labelled by Weise: "var. *humeralis*" of *P. bodemeyeri*. It seems to be different from the nominal form, above all by a more extended yellow pattern and shorter and more slender aedeagus. Further studies on more material are necessary to determine the correct status of this taxon.

BIOLOGICAL NOTES: It feeds on *Quercus* spp., according to Bodemeyer (1906).

SOURCES: Bodemeyer, 1906.

Pachybrachis (Pachybrachis) instabilis (Weise, 1887)

Pachybrachys instabilis Weise, 1887: 330.

TERRA TYPICA: Kendyk Tau Mts (W. Tian-Shan).

GENERAL DISTRIBUTION: Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Adapazari; Balikesir; Bursa; Kirklareli.

MATERIAL EXAMINED: none.

BIOLOGIC NOTES: This species has been collected on *Quercus* spp.

SOURCES: Medvedev, 1989; Lopatin, 1974; 1977; Aslan & Özbek, 1997.

Pachybrachis (Pachybrachis) laticollis (Suffrian, 1860)

Pachybrachyis laticollis Suffrian, 1860: 61.

LOCUS TYPICUS: not recorded.

SYNONYMS: *Pachybrachis misellus* (Weise, 1900); *Pachybrachis callosus* (Sahlberg, 1913).

TAXONOMIC REMARKS: We examined types of *P. misellus* from Weise's collection. The series is constituted as follows: 4 specimens (2 males and 2 females) labelled "Mardin" (white label, handwritten), we designated one male as lectotypus of the species; 3 specimens (1 male and 2 females) labelled "Mardin Staund." (white label, handwritten); 2 specimens (1 male and 1 female) labelled "Zeitun Staund." (white label, handwritten).

GENERAL DISTRIBUTION: Iran; Egypt; Turkey.

DISTRIBUTION IN TURKEY: Mardin (as *P. misellus*).

MATERIAL EXAMINED: Çorum, Koparan, 25.5.1978, 1 spec.; Diyarbakir, Çermik, 14.6.1972, 1 spec.; Mardin, 7 specs., (coll. Weise); Mardin, 2 specs. (1 "cotypus"), (MV); Sivas, Çamlibel, 24.5.1978, 1 spec.; Van, Muradiye, 27.6.1993, 1 spec., (MZ).

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Medvedev, 1989; Lopatin, 1991.

Pachybrachis (Pachybrachis) limbatus (Ménétriés, 1836)

Cryptocephalus limbatus Ménétriés, 1836: 151.

TERRA TYPICA: Greece; Turkey.

GENERAL DISTRIBUTION: Balkans; Syria; Israel; Rhodes; Jordan; Turkey.

DISTRIBUTION IN TURKEY: Antalya; Balikesir; Bolu; Bursa; Çanakkale; Eskisehir (as var. *maculatus* Suffrian); Golbasi; Istanbul; Izmir; Mersin; Samsun.

TAXONOMIC REMARKS: This species is highly variable, perhaps polytypic; at present we are studying the forms attributed to this species.

MATERIAL EXAMINED: Antalya, Imrasan Geç. 24.6.97, 2 specs.; Balikesir, Bigadiç, 21.4.1975, 1 spec.; Balikesir, Cagis, 380m, 6.6.1986, 1 spec.; Bilecik, Çerkesli, 14.5.1976, 2 specs., (MNHG); Çorum, Koparan, 25.5.1978, 2 specs.; Mersin, Namrun, 5.1967 and 5.1997, 3 specs.; Sivas, 1 spec., (MV).

BIOLOGICAL NOTES: Xerophilous species, associated with the tree layer. Probably oligophagous (*Quercus*). Tzanakakis et al. (1963) also reported *Pistacia vera* and *Vitis vinifera* as host plants, but in our opinion these data need confirmation.

SOURCES: Weise, 1889; Bodemeyer, 1900; Sahlberg, 1913; Tzanakakis et al., 1963; Medvedev, 1970; Tomov & Gruev, 1975; Gruev & Tomov, 1984; Warchalowski, 1991; Lopatin & Chikanutov, 1997.

Pachybrachis (Pachybrachis) mardinensis (Weise, 1900)

Pachybrachys mardinensis Weise, 1900: 279.

LOCUS TYPICUS: Mardin.

SYNONYM: *Pachybrachis seidenstueckeri* Kippenberg, 1974.

GENERAL DISTRIBUTION: Lebanon: caza Bcharrè, Kadicha, 1600m, 1/4.6.1972, 3 specimens (**new to Lebanon**); Syria: Jisr ash Shugur, 26.V.1996, 1 spec. (**new to Syria**); Israel: Mt. Hermon, 6.V.1986, 1 spec. (**new to Israel**); Turkey.

DISTRIBUTION IN TURKEY: Gaziantep; Mardin.

MATERIAL EXAMINED: Adana, Daglari, Hasanbeyli, 27.5.92, 1 spec., (MZ); Adiyaman, Nemrut Mts, 1500-2100m, 13.6.1986, 1 spec., (MNUR); Bitlis, Tatvan, 12.6.93, 1 spec., (MZ), (uncertain identification on 1 female of melanistic form); Eibes (= Hatay, Akbes?), 1 spec., (MV); Elâzig, 10 Km N Elâzig, 1100m, 14.6.1986, 1 spec., (MNUR); Gaziantep, Nurdagi gec., 1200m, 1.6.92, 1 spec., (MZ); Hakkâri, 18 Km East Yüksekova, 30.5.94, 2 specs.; Mersin, Imamli, Silifke, 12.5.94, 1 spec., (MZ), (uncertain identification on 1 female of melanistic form); Mersin, Aydinlar, 1000m, 3 specs. (CMAL); Mus, 1500m, 24.5.1988, 1 spec., (MNUR); Van, Alakabuk Dagi, Kuskuh Kivan, Göründü, 28.6.97, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Kippenberg, 1974; Lopatin, 1984, 1991; Tomov, 1984; Medvedev, 1989.

Pachybrachis (Pachybrachis) nigropunctatus (Suffrian, 1854)

Pachybrachys nigropunctatus Suffrian, 1854: 152.

GENERAL DISTRIBUTION: Transcaucasus; Iran; Iraq; Syria; Central Asia; Afghanistan.

DISTRIBUTION IN TURKEY: Adana.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Feeds on *Alhagi* and *Glycyrrhiza*, according to Lopatin (1977).

SOURCES: Lopatin, 1977; Aslan & Ozbek, 1998.

Pachybrachis (Pachybrachis) pentheri Ganglbauer, 1905

Pachybrachis (Pachystilus) Pentheri Ganglbauer, 1905: 280.

GENERAL DISTRIBUTION: Endemic species from Turkey.

LOCUS TYPICUS: Illany Dagh (Kayseri, Turkey).

DISTRIBUTION IN TURKEY: recorded from the type locality only.

MATERIAL EXAMINED: 8 syntypes from Ganglbauer collection, labelled as follows: "Illany - Dagh bei Kaisarie" (white label, printed) / "Asia Min. Penther '02" (white label, printed) / "Pentheri" (white label, handwritten). We designated a male spec. as lectotype of the species.

BIOLOGICAL NOTES: No data were found in the literature.

Pachybrachis (Pachybrachis) picus (Weise, 1882)

Pachybrachys picus Weise, 1882: 264.

TERRA TYPICA: Central Europe.

GENERAL DISTRIBUTION: Central and South Europe; Turkey.

DISTRIBUTION IN TURKEY: Erzurum.
MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer; polyphagous it has been collected on *Corylus* and *Rosa* spp.

SOURCES: Burlini, 1968; Warchalowski, 1991; Aslan & Özbek, 1998.

Pachybrachis (Pachybrachis) scripticollis Faldermann, 1837

Pachybrachis scripticollis Faldermann, 1837: 381.

TERRA TYPICA: Armenia.

SYNONYM: *Pachybrachis israelita* Tappes, 1871.

GENERAL DISTRIBUTION: Caucasus; Syria; Jordan; Israel; Turkmenistan; Northern Afghanistan; Turkey.

DISTRIBUTION IN TURKEY: Turkey (without any explicit locality).
MATERIAL EXAMINED: Diyarbakir, 7.5.1970, 1 spec.; Diyarbakir, Silvan, 27.6.1977, 1 spec.; Diyarbakir, Devegeçidi, 17.6.1975, 2 specs.; Gaziantep, Araban, 8.6.1976, 2 specs.; Hakkâri, Uludere, 15.6.1976, 13 specs.; Mardin, 3.6.1976, 2 specs.; Suludere, 13.6.1976, 10 specs.; Urfa, Siverek, 7.6.1976 and 16.6.1978, 2 specs..

BIOLOGICAL NOTES: This insect has been collected on *Alhagi graecorum* according to Lopatin & Chikanutov, 1997. Also sighted on Licorice according with Lopatin (1977).

SOURCES: Lopatin, 1977; Lopatin & Chikanutov, 1997.

Pachybrachis (Pachybrachis) scriptidorsum Marseul, 1875

Pachybrachis Scriptidorsum Marseul, 1875: 261 (nomen novum).

TERRA TYPICA: Caucasus.

SYNONYMS: *Pachybrachys scripticollis* (Suffrian, 1848) nec Faldermann, 1837; *Pachybrachis albicans chinensis* Weise, 1913.

GENERAL DISTRIBUTION: Bulgaria, Bohemia; Ukraine; Caucasus; Syria; Central Asia; Soutwestern Russia; Siberia; Korea; Mongolia; Northern China; Turkey.

DISTRIBUTION IN TURKEY: Diyarbakir; Erzurum; Gümüshane.
MATERIAL EXAMINED: Artvin, Artvin - Savsat, 500-10.7.1997, 1 spec.

BIOLOGICAL NOTES: This insect feeds on *Glycyrrhiza, Salix, Populus, Chosenia* and perhaps on *Myricaria* and *Statice* according to Medvedev & Roginskaia (1988).

SOURCES: Burlini, 1968; Ogul, 1970; Tomov & Gruev, 1975; Lopatin, 1977; Gruev & Tomov, 1984; Medvedev & Roginskaia, 1988; Warchalowski, 1991, 1998; Aslan & Özbek, 1997a, 1997b.

Pachybrachis (Pachybrachis) sinuatus (Mulsant & Rey, 1859)

Pachybrachys sinuatus Mulsant & Rey, 1859: 47.

LOCUS TYPICUS: La Grande-Chartreuse (near Lyon, France).

SYNONYM: *Pachybrachis haliciensis* (Miller, 1868).

GENERAL DISTRIBUTION: France, Italy, Central Europe, Balkans; Ukraine; Moldova;

Caucasus, Western Siberia; Turkey.

DISTRIBUTION IN TURKEY: Bolu; Erzurum. The species was also reported from the province of Antalya: Sogusku-Kizilchamam (Medvedev, 1975) as *P. haliziensis* [sic], but we could examine one specimen of the mentioned series, which in fact belongs to the closely related species *P. velarum*.
MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous species, it is probably associated with *Salix* spp.

SOURCES: Burlini, 1968; Medvedev, 1975; Mohr, 1977; Lopatin, 1981; Warchalowski, 1991, 1998; Aslan & Özbek, 1997.

Pachybrachis (Pachybrachis) tessellatus ssp. *orientalis* (Weise, 1894)

Pachybrachys tessellatus var. *orientalis* Weise, 1894: 144.

TERRA TYPICA: Araxes valley.

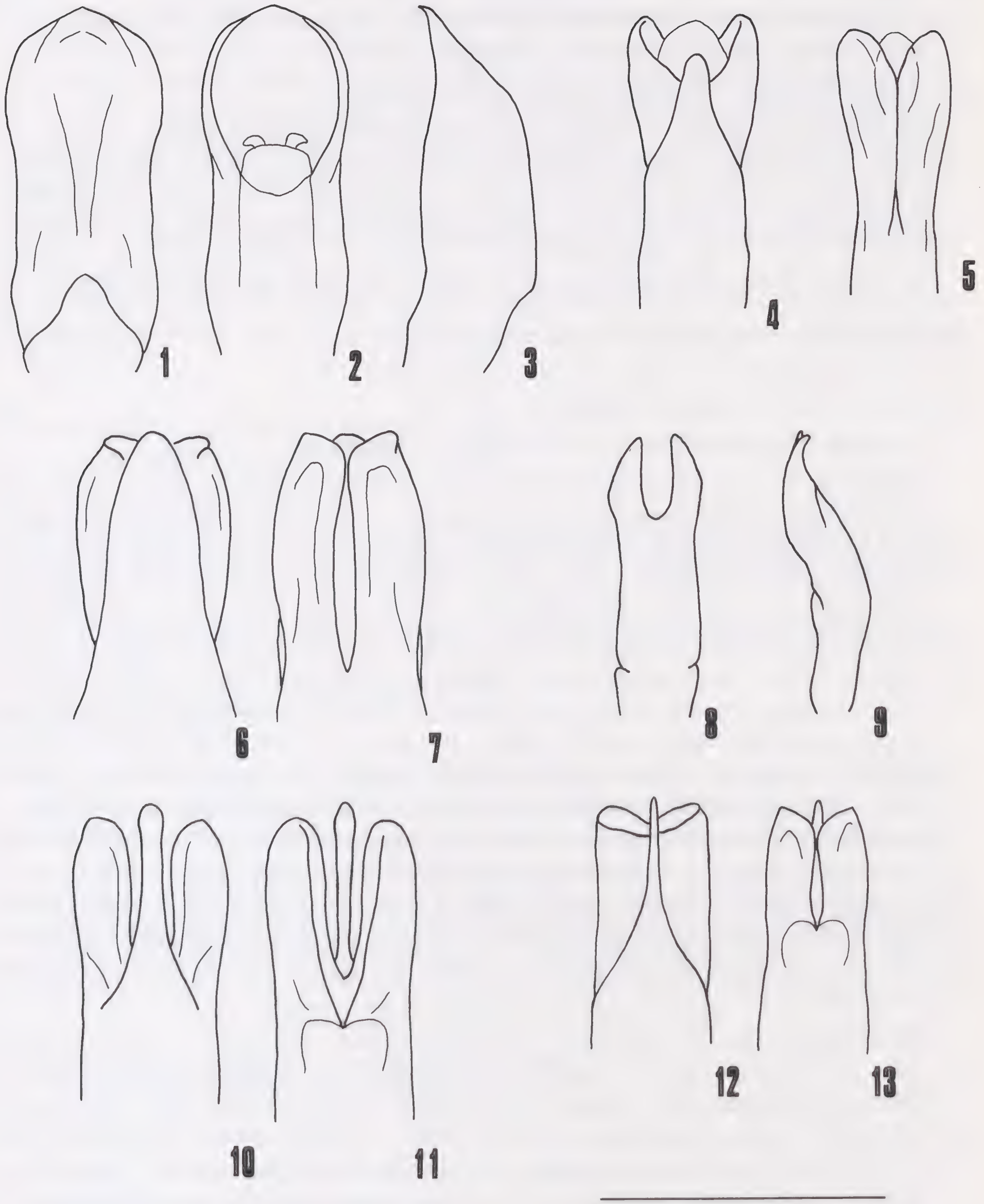
GENERAL DISTRIBUTION: Caucasus; Syria; Israel; Lebanon: Zghorta, Ehden, 1450m, 4.6.1972, 1 specimen (**new to Lebanon**); Turkey. Nominal form in Southern and Central Europe.

DISTRIBUTION IN TURKEY: Adana; Agri; Amasya; Ankara; Bayburt; Bolu; Bursa; Çorum; Erzincan; Erzurum; Gaziantep; Gümüshane; Kayseri; Mersin; Soguksu; Tokat.
MATERIAL EXAMINED: Adana, Erdemli, 15.6.1992, 1 spec., (MZ); Ankara, Akyurt, 15.4.1978, 2 specs.; Antalya, Imrasan, 1300m, 22.6.97, 1 spec.; Antalya, Tepbegasi, 1100m, 11.6.1986, 1 spec., (USR); Çorum, Sungurlu-Delece, 800m, 21.6.1986, 1 spec., (USR); Elâzig, 10 Km North, 1100m, 14.6.1986, 1 spec., (USR); Erzincan, 5 Km W Alakilise, 1700m, 5.6.1987, 14 specs., (USR); Erzurum, between Erzurum and Pasinler, 1900m, 7.7.1987, 28 specs., (USR); Gümüshane, Maden-Bayburt, 1300-1800m, 16.6.1986, 4 specs., (USR); Gümüshane, 10-30 Km NW Bayburt, 1400-1800m, 12.6.1987, 6 specs., (USR); Izmir, Agamannon, 10.5.1975, 1 spec., (MNHG); Kahramanmaras, Göksun, 1450-1600m, 18.6.1986, 1 spec., (USR); Kars, 20 Km E Kagizman, 1150m, 18.6.1986, 1 spec., (MNHG); Kars, 10 Km SW Sarikamis, 2000-2100m, 8.6.1987, 4 specs., (USR); Kayseri, Pinarbasi, 18.6.1978, 3 specs.; Makri, 1 spec.; Mardin, Derik, 5.6.1976, 1 spec.; Mersin, Çamalan, 11.6.1983, 1 spec.; Nevsehir, 20.6.1968, 8 specs.; Nevsehir, Göre, 23.6.93, 3 specs., (MZ); Sivas, Kizildag geçidi, 1950-2100m, 5.6.1987, 1 spec., (USR); Suhut, 15.6.1972, 1 spec.; Tokat, Almus, 1050-1300m, 19/29.6.94, 1 spec.; Van, Gevas, 29.6.93, 1 spec., (MZ).

BIOLOGICAL NOTES: Xerophilous species; nominal form feeds on *Quercus* spp.; not confirmed *Corylus avellana;* unlikely *Salix caprea*.

TAXONOMIC REMARKS: 30% of the specimens examined are totally lacking the yellow spots on pygidium (ab. *melanopygus* G. Müller). A large part of the remainder have only signs of this pattern. 70% are lacking the little yellow lateral spot on pronotum. Differences from nominal form seem not to be constant, in our opinion. If the present taxon is confirmed as a true geographic form, it probably should assume the name *P. tessellatus* ssp. *tauricus* (Suffrian, 1848).

SOURCES: Escherich, 1897; Bodemeyer, 1900; Weise, 1884 , 1906; Ganglbauer, 1905; Medvedev, 1970; Tomov & Gruev, 1975; Tomov, 1984; Warchalowski,1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.



Figs 1-13: aedeagus. 1-3: *Cryptocephalus curda* Jacobson (Sivas, Turkey), (scale: 0.62 mm); 4-5: *C. lederi* Weise (Kabul, Afghanistan); 6-7: *C. ocellatus* Drapiez (Sondrio, Italy); 8-9: *C. tschimganensis* Weise (from Lopatin, 1977); 10-11: *C. pusillus* Fabricius (Como, Italy); 12-13: *C. tshorumae* Tomov (Bolu, Turkey). Figures 4-13: scale: 0.49 mm.

Pachybrachis (Pachybrachis) velarum Warchalowski, 1998

Pachybrachis velarum Warchalowski, 1998: 85.

LOCUS TYPICUS: Refahiye (Erzincan, Turkey).

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: Erzincan; Erzurum; Gümüshane; Kösk Köyü.

MATERIAL EXAMINED: Ankara, Kizilcahamam, 2 spec.; Gümüshane, Maden, Kop Dag geçidi, 1700-2300m, 12.7.1987, 2 specs., (USR); Kars, 16 Km SW Göle, 1600m, 16.6.1986, 26 specs., (MNHG); Kars, 10 Km S Sarikamis, 2000-2100m, 8.7.87, 1 spec., (USR); Kars, Sarikamis, 1.7.1997, 2 specs.; Sivas, Kizildag geçidi, 1950-2000m, 5.7.87, 4 specs., (USR).

BIOLOGICAL NOTES: This species feeds on *Salix* in mountain and highland regions.

Cryptocephalus (Protophysus) moehringi Weise, 1884

Cryptocephalus (Proctophysus) Möhringi, Weise 1884a: 158.

LOCUS TYPICUS: Amasya (Turkey).

SYNONYM: *Cryptocephalus bodemeyeri* Weise, 1900 **n. syn.**

TAXONOMIC REMARKS: Among 37 specimens received as *C. moehringi* from the Museum für Naturkunde in Berlin we found the true types of this species mixed with the types of *C. bodemeyeri.* Some specimens labelled as paralectotypes of *C. moehringi* are instead syntypes of the latter species. According to the data in the original description (Weise, 1884, 1900), *C. moehringi* was established on 3 males and 4 females collected by Funcke in Amasya and *C. bodemeyri* on specimens collected by v. Bodemeyer in Bilecik. Among the material there are 7 specimens (belonging to 3 distinct series, according to label's data) which were really collected in Amasya. We have kept the foregoing suggestion of Lopatin (unpublished) and designated as lectotype of *C. moehringi* a male specimen labelled: "*Möhringi* Amasia" (white label, handwritten) / Lectotypus design. Lopatin 1992 (red label, printed). Another male specimen, with the same data is designated as paralectotype. Three specimens (2 males and 1 female) labelled "Amas" and also labelled as paralectotypes by Lopatin must be rejected because their number does not correspond to the original description. Further, 2 specimens (1 male and 1 female) labelled "Amasia Korb" cannot be included as well because the collector does not accord with what the author reported. It follows that 2 specimens constitute the type series of the species.

We designated the type series of *C. bodemeyeri* as follows. Lectotype: 1 female labelled: "Asia Minor Biledjek v. Bodemeyer (printed) / "*Proctophysus Bodemeyeri* m." (White label, handwritten). Paralectotypes: 1 male: Asia Minor Biledjek v. Bodemeyer (printed) / "Mit den Typus vergliden Mohr, 1968" / *Cryptoc. moehringi* Wse det. Mohr / *C. Schaefferi möhringi* det Lopatin. 4 males and 3 females labelled: "Biledjek v. Bodem." (white label, handwritten); one of them brings also "*Möhringi* Ws." (handwritten) and 5 of them had been formerly labelled as paralectotypes of *C. moehringi* by Lopatin.

Anyway, specimens from Amasya and Bilecik are identical in our opinion, so we propose the following new synonymy: *Cryptocephalus moehringi* Weise, 1884 = *Cryptocephalus bodemeyeri* Weise, 1900.

GENERAL DISTRIBUTION: Albania (?); Greece; Cyprus; Syria; Jordan; Turkey.

DISTRIBUTION IN TURKEY: (Some data have been reported as *C. bodemeyeri*). Amasya; Bilecik; Bolu; Burna; Erzurum; Kars; Mersin.

MATERIAL EXAMINED: Ankara, Lalahan, 7.6.1978, 2 specs.; Bilecik, Inegöl-Bozöyük, 750-1000m, 12.6.1991, 1 spec.; Bilecik, Pazaryeri, 7.5.1973, 2 specs.; Bolu, Abant, 1100-1400m, 21.6.1997, 1 spec.; Bolu, Gerede, 28.5.1980, 1 spec.; Bursa, Mudanya, 19.5.1973, 1 spec.; Çankiri, Çerkes, 22.6-4.7.1997 (CMAL); Çorum, Alaca, 12.6.1978, 1 spec.; Eskisehir, Porsuk Baraji, 22.5.1998, 4 specs..

BIOLOGICAL NOTES: According to label data of one specimen, it was collected on *Crataegus* sp.

SOURCES: Bodemeyer, 1900; Weise, 1898; 1900, 1906b; Apfelbeck, 1901; Burlini, 1956; Medvedev, 1970; Tomov & Gruev, 1975; Lopatin & Chikanutov, 1997; Aslan & Ozbek, 1997.

Cryptocephalus (Protophysus) schaefferi Schrank, 1789

Cryptocephalus Schaefferi Schrank, 1789: 69.

TERRA TYPICA: not recorded.

SYNONYMS: *Cryptocephalus haemorrhoidalis* Olivier, 1791; *Cryptocephalus unicolor* Olivier, 1791; *Cryptocephalus notatus* Schneider, 1792; *Cryptocephalus lobatus* Fabricius, 1792.

GENERAL DISTRIBUTION: Europe; Balkans; Ukraine; Caucasus; Western Russia; Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Erzurum.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous speces, associated with the tree layer; polyphagous, it has been collected on Rosaceae, Fagaceae, Corylaceae, Salicaceae.

SOURCES: Lopatin, 1977; Aslan & Özbek, 1997; Warchalowski, 1991; Burlini, 1956.

TAXONOMIC REMARKS: It has been reported from Turkey by some authors. We have observed some specimens intermediate with *C. moehringi* Weise, collected in Southern Balkans, therefore it is possible that *C. schaefferi* is conspecific with *C. moehringi*. The latter could represent a geographic variant occurring in the Southeastern part of the range. Further data are necessary in order to solve this question.

Cryptocephalus (Protophysus) wehnkei Weise, 1882

Cryptocephalus wehnkei Weise, 1882: 179 (note).

TERRA TYPICA: Taurus Mts.

GENERAL DISTRIBUTION: It is an endemic species from Turkey.

DISTRIBUTION IN TURKEY: Taurus Mts.

MATERIAL EXAMINED: Antalya, Seklik, 5.1994, 2 specs., (JB); Mersin, Erdemli, 600-950m, 20.6.93, 2 specs.; Mersin, Namrun, 5.1967 and 5.1997, 2 specs.; Mersin, Namrun, Çamliyayla, 2.6.1981, 1 spec. (USR); Imrasan Geç., 24.6.97, 4 specs.; "Taurus", (Typus ?, Zoologische Museum, Berlin, ex coll. Weise).

BIOLOGICAL NOTES: No data were found in the literature.

TAXONOMIC REMARKS: The single specimen of *C. wehnkei* in Weise's collection is a male labelled "Taurus" and "*Wehnkei*" and carries two more white labels each with a single unintelligible word that certainly do not correspond to the data of the original description. So we consider the specimen as uncertain type.

Besides, we had the chance to study female of this species (unknown until now). Dorsal pattern is metallic blue, with yellow spots on apex of elytra, as usual in species of the subgenus *Protophysus*, but the yellow pattern is more extended anterad, reaching the anterior middle of elytra on sides. Similar widened yellow spots are present in a male specimen as well. Legs of female are metallic blue, but tibiae and femora partly yellowish.

SOURCES: Weise, 1898.

Cryptocephalus (Asionus) amasiensis Weise, 1894

Cryptocephalus amasiensis Weise, 1894: 91.

LOCUS TYPICUS: Amasya.

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: recorded from the type locality only.

MATERIAL EXAMINED: Amasya, 23.5.1892, 1 spec., (MV).

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Weise, 1894b; Lopatin, 1965.

Cryptocephalus (Asionus) apicalis Gebler, 1830

Cryptocephalus apicalis Gebler, 1830: 201.

TERRA TYPICA: Altaj Mts.

SYNONYM: *Cryptocephalus flavoguttatus* Suffrian, 1847.

GENERAL DISTRIBUTION: Central and eastern Europe; Balkans; Ukraine; Caucasus; Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Turkey, without further informations.

MATERIAL EXAMINED: Ankara, Karagöl, Çubuk, 30.6.1979, 1 spec.

BIOLOGICAL NOTES: Moderately xerophilous species, associated with herbaceous plants (*Artemisia, Potentilla; Ranunculus; Achillea*).

SOURCES: Clavareau, 1913; Burlini, 1956; Ogul, 1970; Lopatin, 1977; Gruev & Tomov, 1984; Medvedev & Roginskaia, 1988; Warchalowski, 1991.

Cryptocephalus (Asionus) curda Jacobson 1897

Cryptocephalus curda Jacobson, 1897: 215.

LOCUS TYPICUS: Kasikoporan (Armenia).

SYNONYM: *Cryptocephalus araxidis* Weise, 1898.

GENERAL DISTRIBUTION: Araxes valley; Armenia; Turkey. We have examined several specimens from Khoszov reserve (Armenia), 10.7.1997.

DISTRIBUTION IN TURKEY: Afyon; Erzurum; Konya.

MATERIAL EXAMINED: Agri, Hamur, 10.8.1974, 2 specs.; Agri, Tendürek, 2600m, 3.8.1977, 1 spec.;

Çorum, Iskilip, 6.8.1979, 2 specs.; Erzurum, Horasan, 15.7.1982, 1 spec.; Kars, Igdir, 6.8.1977, 16 specs.; Konya, Aksehir, 1900 (Zoologische Museum, Berlin, ex coll. Weise); Ordu, Kumru, 13.7.1978, 3 specs.; Sivas, Hafik Mt., 1150m and Pasbahce Mt., 1250m, 14.7.79, 6 specs.; betw. Tunceli and Elazig, Yilandag, 11.8.1979, 2 specs..

TAXONOMIC REMARKS: We examined and designated the lectotype of *C. araxidis* from Weise's collection (Zoologische Museum, Berlin). It is a male specimen, labelled as follows: Caucasus Araxesthal Leder Reitter (printed, white label) / *araxidis* m. (handwritten, white label). We confirm the synonymy *Cryptocephalus curda* Jacobson, 1897 = *Cryptocephalus araxidis* Weise, 1898.

BIOLOGICAL NOTES: on *Verbascum* sp., according to label data.

SOURCES: Jacobson, 1897; Weise, 1898, 1901; Burlini, 1965; Aslan & Özbek, 1997a, 1997b.

Cryptocephalus (Asionus) pseudoreitteri Tomov, 1976

Cryptocephalus pseudoreitteri Tomov, 1976: 83.

LOCUS TYPICUS: Beypazari (Ankara, Turkey).

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: recorded from type locality only.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Tomov, 1976.

Cryptocephalus (Asionus) quatuordecimmaculatus Schneider, 1792

Cryptocephalus 14maculatus Schneider, 1792: 195.

TERRA TYPICA: Austria.

SYNONYMS: *Cryptocephalus coloratus* Fabricius, 1798; *Cryptocephalus pilleri* Schrank, 1798.

GENERAL DISTRIBUTION: Central Europe; Balkans; Ukraine; Turkey.

DISTRIBUTION IN TURKEY: Ankara, Erzurum.

MATERIAL EXAMINED: Ankara, Sögütözü, 1.5.1979, 1 spec.

BIOLOGICAL NOTES: Xerophilous species, feeding on *Artemisia*, *Seseli, Lithospermum, Anthericum*.

SOURCES: Marseul, 1875; Escherich, 1897; Burlini, 1956; Medvedev & Roginskaia, 1988; Warchalowski, 1991; Aslan & Özbek, 1998.

Cryptocephalus (Lamellosus) angorensis Pic, 1908

Cryptocephalus angorensis Pic, 1908: 14.

LOCUS TYPICUS: Ankara.

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: Amasya; Ankara; Çorum. Specimens from Amasya and Çorum were previously identified as *C. laevicollis* (Tomov & Gruev, 1975). According to Tomov (1979) they must be attributed to the present species. The old reports of *C. laevicollis* for Turkey (Weise, 1893) might be referred as well to *C. angorensis*.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Pic, 1908; Tomov, 1979.

Cryptocephalus (Homalopus) loebli Sassi, 1997

Cryptocephalus (Homalopus) loebli Sassi, 1997: 57.

LOCUS TYPICUS: Bolu (Abant, Turkey).

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: Recorded only for the type locality.

MATERIAL EXAMINED: Bolu, Abant, 1500-1600 m; 22.5.76, 2 specs. (typus and paratypus, MNHG); Bolu, Abant, 1.6.1991, 1 spec. (FK); Zonguldak, Safranbolu, 1000m, 5.6.1996, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature.

Cryptocephalus (Homalopus) prusias Suffrian, 1853

Cryptocephalus Prusias Suffrian, 1853: 95.

LOCUS TYPICUS: Bursa (Turkey).

SYNONYM: *Cryptocephalus delagrangei* Pic, 1898.

GENERAL DISTRIBUTION: Syria; Jordan; Turkey.

DISTRIBUTION IN TURKEY: Amasya (1000m); Balikesir; Bilecik; Bursa; Erzurum; Gümüshane (1800m); Kirklareli; Mersin; Mus.

MATERIAL EXAMINED: Adana, Daglari, Hasanbeyli, 29.5.92, 1 spec., (MZ); Ankara, Kizilcahamam, 9.6.1978, 1 spec.; Bolu, Abant, 28.5.1980, 1 spec.; Çankiri, Çerkes, 22.6-4.7-1997, 1 spec.; Erzurum, Ispir-Çamlikaya, 26.6.97, 1 spec. (CSAL); Eskisehir, 4.1934, 2 specs.; Eskisehir, Porsuk Bajari, 22.5.1998, 2 specs.; Konya, Beynam, Gülde, 29.6.1977, 1 spec.; Kütahya, Gediz, 19.6.1972, 1 spec.; Mersin, Namrun, 5.97, 4 specs.; Sivas, Koyulhisar, 10.6.1991, 1 spec., (JB).

BIOLOGICAL NOTES: On *Quercus* sp. according to Tomov & Gruev (1975).

SOURCES: Weise, 1884 ; Pic, 1898; Bodemeyer, 1900; Medvedev, 1970; Tomov & Gruev, 1975; Tomov, 1978; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) anticus Suffrian, 1848

Cryptocephalus anticus Suffrian, 1848: 37.

TERRA TYPICA: Caucasus.

SYNONYM: *Cryptocephalus nigerrimus* Ballion, 1878.

GENERAL DISTRIBUTION: Caucasus; Syria; Jordan; Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Turkey (without further information).

MATERIAL EXAMINED: Hakkâri, Yüksekova, 18 Km E, 30.5.94, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature.

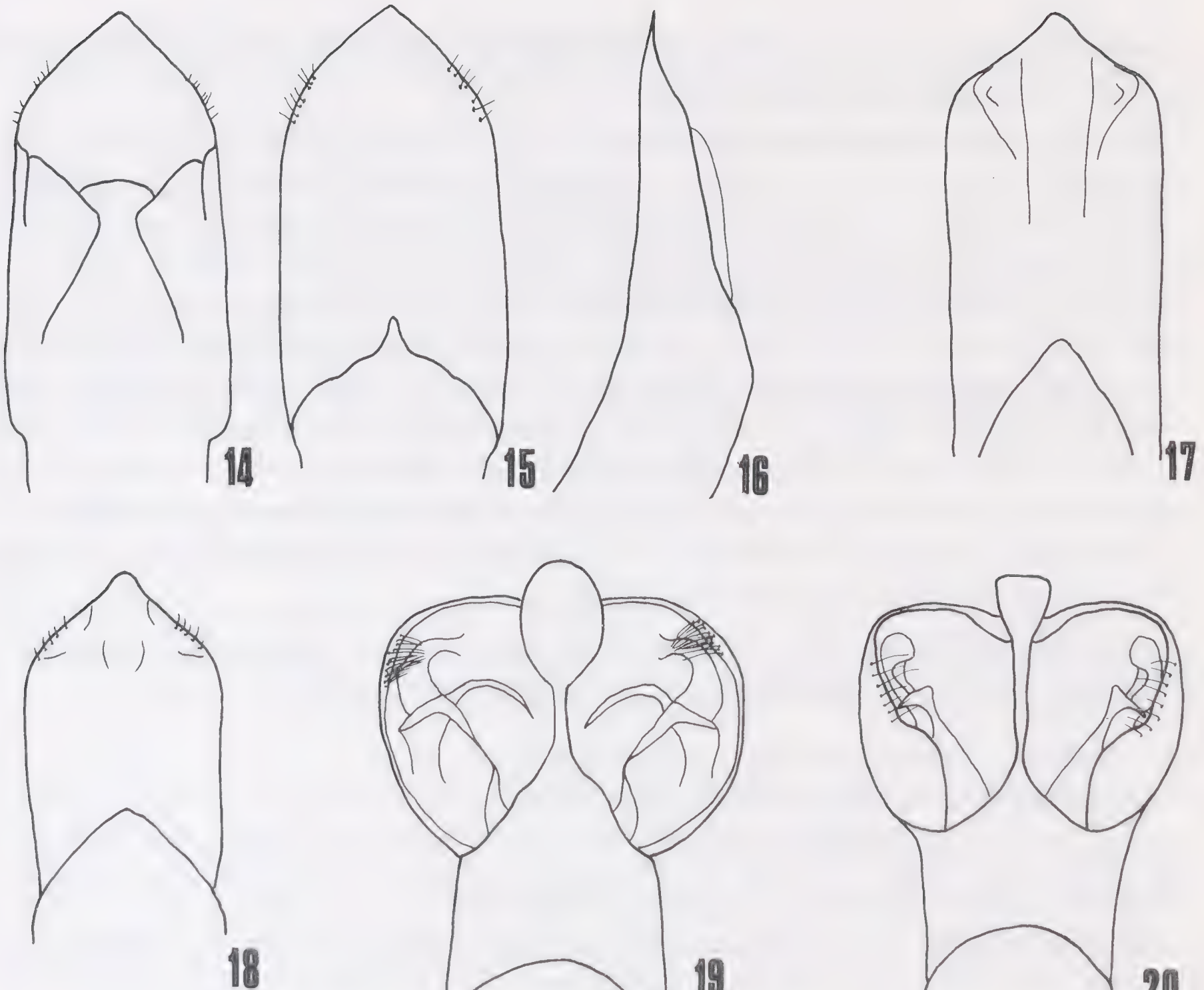
SOURCES: Lopatin & Chikanutov, 1997.

Cryptocephalus (Cryptocephalus) aureolus Suffrian, 1847

Cryptocephalus aureolus Suffrian, 1847: 132.

TERRA TYPICA: Europe.

REMARKS: The status of the geographic forms attributed to this species is at present



Figs 14-23: aedeagus. Figs 14-16: *Cryptocephalus peyroni* Marseul (Hatay, Turkey), (scale: 0.55 mm); 17: *C. bicolor* Eschscholtz (Astrabad, Iran), (scale: 0.76 mm); 18: *C. pelleti* Marseul (Lebanon), (scale: 0.76 mm); 19: *C. laevicollis* Gebler (Moravia), (scale: 0.76 mm); 20: *C. angorensis* Pic (locality unknown), (scale: 0.59 mm); 21-23: *C. volkovitschi* Lopatin (Armenia), (scale: 0.76 mm). Figures 17-20 show aedeagus in ventral view.

under revision by one of us (DS). In this work we prefer to consider *C. aureolus* as a single widespread and variable taxon.

GENERAL DISTRIBUTION: Europe; Caucasus; Jordan; Turkey; Syria; Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Antalya; Artvin; Bilecik; Bolu (1400-1600m); Erzincan; Erzurum; Kastamonu (1800m); Kayseri; Manisa (1500m); Probably some of these records might have to be attributed to *C. paphlagonius* n. sp.

MATERIAL EXAMINED: Bolu, Lake Abant, 1500m, 7.1972 and 7.1973, 2 specs.; Erzurum, Kackar Mts, 2000-2500m, 21.7.1983, 1 spec., (HK); Kastamonu, Ilgaz-dag 1800-2200m, 23.7.1963, 1 spec., (DE); Kastamonu, Ilgaz dag, 1800-2300m, 7.1972 and 7.1973, 3 specs.; Kirklareli, Yildiz Mts, Demirköy, 500-900m, 25.6.1997, 2 specs.; Mersin, Çamliyayla, 500-800m, 1.6.92, 1 spec.; Yaylak, Kacklar Mt., 2000-2400m, 6/10.7.1997, 5 specs. (JB).

BIOLOGICAL NOTES: Polyphagous and meadow mesophilous species, prevalently associated with Asteraceae Liguliflorae and *Ranunculus* spp. In Southern part of its range it occurs in mountain and highland regions.

SOURCES: Ganglbauer, 1905; Burlini, 1956; Tomov, 1984; Lopatin, 1977; Lopatin & Chikanutov, 1997; Warchalowski, 1991; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) bicolor Eschscholtz, 1818

Cryptocephalus bicolor Eschscholtz, 1818: 466.

TERRA TYPICA: not recorded.

SYNONYM: *Cryptocephalus concinnus* Suffrian, 1853.

GENERAL DISTRIBUTION: Southern Europe; Ukraine; Balkans; Turkey; Caucasus; Iran; Turkey.

DISTRIBUTION IN TURKEY: Erzurum; Tokat.

MATERIAL EXAMINED: Kars, 16 Km SW Göle, 1600m, 16.6.1986, 2 specs..

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer (*Quercus, Salix* and *Populus).*

SOURCES: Ogul, 1970; Rapilly, 1979; Gruev & Tomov, 1984; Medvedev & Roginskaia, 1988; Warchalowki, 1991; E; Aslan & Ozbek, 1997a, 1997b.

Cryptocephalus (Cryptocephalus) biguttatus (Scopoli, 1763)

Buprestis Biguttata Scopoli, 1763: 65.

TERRA TYPICA: not recorded.

GENERAL DISTRIBUTION: Europe; Balkans; Ukraine; Central Asia; Siberia; Turkey.

DISTRIBUTION IN TURKEY: Ankara; Bolu (1450-1500m).

MATERIAL EXAMINED: Bolu, Abant, 23.6.1969, 9 specs. (USR).

BIOLOGICAL NOTES: Mesophilous or hygrophilous species, living on both trees and herbaceous plants as well. According to literature, it seems to be polyphagous and has been collected on species of several plant families (Salicaceae, Fagaceae, Corylaceae, Betulaceae, Ericaceae, Asteraceae and Juncaceae).

SOURCES: Ogul, 1970; Tomov & Gruev, 1975; Lopatin, 1977; Tomov, 1984; Gruev & Tomov, 1984; Warchalowski, 1991.

Cryptocephalus (Cryptocephalus) biledjekensis Pic, 1909

Cryptocephalus cribratus var. *biledjekensis* Pic, 1909: 153.

LOCUS TYPICUS: Bilecik.

GENERAL DISTRIBUTION: Bulgaria; Turkey.

DISTRIBUTION IN TURKEY: Bilecik; Gümüshane.

MATERIAL EXAMINED: Ankara, Kizilcahamam, 12.7.1979, 1 spec.; Izmir, 1 spec.; Izmir, Bergama, 14.5.1971, 1 spec.; Konya, Dozar, 1 spec.; Siirt, Aktas, 650m, 20.5.1988, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Pic, 1909; Tomov, 1978; Gruev & Tomov, 1984; Warchalowski, 1991.

Cryptocephalus (Cryptocephalus) bipunctatus (Linné, 1758)

Chrysomela 2-punctata Linné, 1758: 374.

TERRA TYPICA: Europe.

SYNONYM: *Cryptocephalus dispar* Paykull, 1799.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Central Asia; Siberia; NE China; Korea; Turkey. The ancient report for Northern Africa (Weise, 1893) has never been confirmed.

DISTRIBUTION IN TURKEY: Amasya; Ankara; Artvin; Bolu; Bursa; Çanakkale; Çorum; Erzincan; Erzurum; Izmir; Kars; Mersin; Sinop; Sivas (1650m).

MATERIAL EXAMINED: Ankara, Kizilcahamam, 6.1992,1 spec., (JB); Bolu, Abant, 1100-1400, 21.6.97, 2 specs. (CSAL); Bursa, 19.6.1967, 2 specs.; Çorum, Bogazkale, 1150m, 10.7.1995, 1 spec. (USR); Istambul, Alem Dagh, 10.6.1966, 1 spec.; Izmir, Yeniköy, 60m, 3.6.1991, 1 spec.; Kars, Sarikamis, 2000-2200m, 8.7.1987, 6 specs.; Kars, Sarikamis, 2000m, 21.6.1994 and 7.6.1998, 6 specs.; Kars, Sarikamis, 28.6.97, 2 specs. (CSAL); Kirklareli, Lüleburgaz, 29.5.91, 2 specs., (JB); Konya, 15.6.1980, 3 specs.; Konya, Aksehir, 6.1967, 1 spec.; Kütahya, Örencik, 20.5.1971, 1 spec.; "Lycia", 2 specs.; Manisa, Sabuncubeli, 10.6.1972, 1 spec.; Mersin, Çamliyayla, 1 spec., (CMAL); Mersin, Çamliyayla, 1400-1850m, 9.6.1986, 1 spec.; Mersin, Çamliyayla, 29.6/3.8.1997, 4 specs., (JB); Mersin, Guzeloluk, 25.6.97, 1 spec., (CMAL); Tokat, Artova, 2.7.1978, 1 spec.; Zonguldak, Çaycuma, 16.7.1979, 1 spec.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. Polyphagous (Salicaceae, Fagaceae, Corylaceae and Betulaceae). Some specimens were collected on *Paliurus* sp.

SOURCES: Escherich, 1897; Sahlberg, 1913; Burlini, 1956; Gressitt & Kimoto, 1961; Bodemeyer, 1900; Medvedev, 1970; Ogul, 1970; Tomov & Gruev, 1975; Lopatin, 1977; Tomov, 1984; Aslan & Özbek, 1997 Aslan & Özbek, 1998.

Cryptocephalus (Cryptocephalus) cordiger (Linné, 1758)

Chrysomela cordigera Linné, 1758: 375.

TERRA TYPICA: Europe.

GENERAL DISTRIBUTION: Central and Eastern Europe; Balkans; Central Asia; Siberia; Turkey.

DISTRIBUTION IN TURKEY: Erzurum.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Polyphagous and mesophilous, associated with the tree layer (Fagaceae, Betulaceae, Salicaceae and Rosaceae).

SOURCES: Lopatin, 1977; Warchalowski, 1991; Aslan & Özbek, 1998.

Cryptocephalus (Cryptocephalus) crassus Olivier, 1791

Cryptocephalus crassus Olivier, 1791: 620.

TERRA TYPICA: Var (France).

SYNONYM: *Cryptocephalus gravidus* Herrich-Schäffer, 1838.

GENERAL DISTRIBUTION: Southern Europe; Syria; Israel; Northern Africa; Turkey. Reports from Caucasus and Turkmenistan (Marseul, 1875) have not been confirmed by more recent authors.

DISTRIBUTION IN TURKEY: Turkey (without any explicit locality).

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Xerophilous species, moderately polyphagous, associated with shrubby Papilionaceae ("Brooms") and Asteraceae (*Artemisia*). Feeding on *Artemisia monosperma* in eastern part of its range according with Lopatin & Chikanutov (1997).

SOURCES: Marseul, 1875; Lopatin & Chikanutov, 1997.

Cryptocephalus (Cryptocephalus) cribratus Suffrian, 1847

Cryptocephalus cribratus, Suffrian, 1847: 90.

LOCUS TYPICUS: Istanbul.

SYNONYM: *Cryptocephalus trapezensis* Tappes, 1871 **n. syn.**

TAXONOMICS REMARKS: Thanks to the kindness of Dr Nicole Berti, we were able to examine the single specimen of *C. trapezensis* Tappes in Tappes' collection. It is a female, labelled as follows: "Persath Deyr" (printed, white label) / "597" (handwritten, white label) / "spec ?" (handwritten, white label) / "42" (handwritten, white label) / "type" (printed, red label)/ "*Cryptocephalus trapezensis* Tappes" (handwritten, white label). Data collection do not completely agree with what the author reported in the description: indeed, "Persath" is quite an enigmatic information and it seems not to correspond with any of the present Turkish toponyms (type locality is Trabzon). On the other hand the collector (Deyrolle) is the same. Anyway we think that the specimen properly represents the sense that Tappes gave to the species, so we designated it as neotype of the species. In our opinion *Cryptocephalus trapezensis* should be considered a chromatic form of *C. cribratus*. The latter is a variable species and all intermediates have been observed. Furthermore, the aedeagus of the *trapezensis* form does not differ significantly. Accordingly, we propose the following synonymy: *Cryptocephalus cribratus* Suffrian, 1847 = *Cryptocephalus trapezensis* Tappes, 1871.

GENERAL DISTRIBUTION: Caucasus; Iran; Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Bilecik; Erzurum (as *C. trapezensis*); Gümüshane (1800m); Konya; Trabzon; (as *C. trapezensis*).

MATERIAL EXAMINED: "Anatolia, ab. *anatolicus* mihi", 1 spec., (MV) (as *C. tràpezensis*); Ankara, 14.5.1980, 1 spec.; Ankara, Karagöl, Çubuk, 20.6.1979, 1 spec.; Bilecik, leg. Bodemeyer, 2 specs., (MV); Bolu, Abant, 1100-1400m, 21.6/5.7.1997, 1 spec.; Erzurum, Ilica, Yildizeli, Sivas, 1250m,

14.7.1979, 1 spec.; Erzurum, Kackar Mt., Yaylalar, 5/10.7.1997, 5 specs., (JB); Izmir, Bademli, 5.6.1969, 1 spec.; Kars, Sarikamis, 2000m, 7.6.1998, 1 spec.; Nevsehir, Ürgüp, 20.5.1978, 1 spec.

BIOLOGICAL NOTES: On *Populus nigra*, according to label data. Feeding on *Salix* sp., after Aslan & al. (1997).

SOURCES: Tappes, 1871; Bodemeyer, 1900; Weise, 1901; Tomov & Gruev, 1975; Lopatin, 1977; Tomov, 1979; Rapilly, 1980; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) duplicatus Suffrian, 1847

Cryptocephalus duplicatus Suffrian, 1847: 126.

TERRA TYPICA: Caucasus.

SYNONYM: *Cryptocephalus unicolor* Faldermann, 1837 nec Olivier, 1791.

GENERAL DISTRIBUTION: SE Bulgaria; Caucasus; Jordan, Israel; Turkey.

DISTRIBUTION IN TURKEY: Several authors reported the present species under the name *C. concolor* Suffrian, 1847. According to Lopatin (1984) *C. concolor* does not reach the territory under study. Adapazari; Amasya; Ankara (1300m); Antalya (2000m); Artvin (2200m); Bilecik; Bitlis (2300m); Bolu; Bursa (1400m); Çorum (1150m); Erzincan (2150m); Erzurum (2300m); Giresun (1800-2000m); Gümüshane; Isparta; Izmir; Izmit; Kars (2000m); Kastamonu (1800m); Konya (1200m); Mersin; Samsun; Sinop; Sivas (1650m); Tunceli (900m); Trabzon; Van; Yozgat (1300m).

MATERIAL EXAMINED: Adana, Osmaniye, Hasanbeyli, 5.1970 1 spec., (HK); Adapazari, Sapanca, 17.5.1973, 1 spec.; Amasya, Aydinca, 600m, 24.6.1997, 2 specs. (CSAL); Amasya, Inegöl Dagi, 900m, 23.6.1997, 1 spec. (CSAL); Ankara, 9.6.1977, 1 spec.; Ankara, Ayas, 10.7.1979, 3 specs.; Ankara, Beynam, 26.6.1977, 2 specs.; Ankara, Çogun, 23.6.1993, 1 spec., (MZ); Ankara, Karagöl, 7.7.1978 1 spec.; Ankara, Kizilcahamam, 25.5-6.7.1970, 1 spec., (HK); Ankara, Çogun Lake, 22.6.1993, 2 specs., (MZ); Antalya, Gündogmus, 27.6.1980 and 23.6.1997, 2 specs.; Antalya, Imrasan Geç., 24.6.1997, 2 spec.; Antalya, Sögüt, 20.6.1981, 1 spec.; Antalya, Yarpuz, 12.6.1997, 5 specs.; Artvin, 12.6.1973, 4 specs.; Artvin, Ardanuc, 1550m, 10.6.1998, 2 specs.; Artvin, Artiparmak,Yusufeli, 1400-1800m., 20.7.1983, 2 specs., (DE); Artvin, Artvin - Savsat, 500/1000m, 26.6.1997, 3 specs., (CSAL); Artvin, Bilbilan, Yalnizcam Pass., 1700-2600m, 16 specs., (DE); Artvin, Kackar Mt., Yaylak, 2000-2400m, 6/10.7.1997, 9 specs. (JB); Artvin, Kackar Mt., Yaylalar, 5/10.7.1997, 23 specs., (JB); Artvin, Kafkasoryayla, 1600-1700m, 5.7.1992, 1 spec., (DE); Artvin, Karafsor, 23.6.1990, 3 specs., and 6.7.1993, 2 specs., (DE); Artvin, Karçkal dagh, Otingöl, 2000-2600m, 10.7.1983, 2 specs., (DE); Artvin, Savsat-Carn Geç., 1000/1500m, 26.6.1997, 1 spec. (CSAL); Artvin, Sarigöl, Biçakçilar, 13.7.96, 1 spec., (MZ); Bilecik, 17.7.1972 and 15.6.1977, 3 specs.; Bilecik, Gölpazari, Besevler, 450 m., 23.5.1996, 1 spec., (MZ); Bilecik, Pazaryeri, 16.7.1972, 1 spec.; Bilecik, Sögüt, 20.6.1975 and 20.6.1981, 3 specs.; Bolu, Abant, 1100-1400m, 21.6.1997, 1 spec., (CMAL); Bolu, Seben, 12.7.1978, 4 specs.; Bursa, Karacabey, 15.6.1976, 2 specs.; Bursa, Cagliyan, 19.7.1997, 10 specs., (JB); Bursa, Uludag, Bursa-Sugukpinar, 1000m., 19.7.1989, 1 spec., (DE); Bursa, Uludag, 1800m, 24.7.1988, 1 spec., (HK); Çankiri, Çerkes, 4.7.1997, 4 specs. (CSAL); Çankiri, Çerkes, 22.6.1997, 2 specs.; Çankiri, Eskipazar, 31.7.1979, 1 spec.; Çorum, 6.1973 and 6.1974, 2 specs.; Çorum, Kos Mt., 1100-1900m., 1 spec., (DE); Eregli, 25.5.1980, 1 spec.; Erzincan, Tercan, 1400m, 20.6.1994, 1 spec.; Erzurum, Dumlu-Koyu, 2000m., 28.7.1973, 1 spec., (DE); Erzurum, Kackar Mt., Hevek, 2000-2500m, 7.8.1984, 2 specs.; Erzurum, Kackar Mt., Hevek, (Meretet-yayla), 2000-2500m 1 spec., (HK); Erzurum, Pazaryolu-Golyurt Gec., 1500-2000m, 4 specs.; Eskisehir, Mahmudiye, 8.7.1979, 2 specs.; Gindrak, 4.6.1971, 1 spec.; Gümüshane, 11.7.1978, 2 specs.; Gümüshane, Kilickaya, 1700-2100m, 17.7.1992, 3 specs.,

(DE); Gümüshane, Maden, Kop Dag geçidi, 2200-2500m, 5.8.1995, 14 specs. and 29.7.1993 1 spec., (DE); Gümüshane, Maden, Kop Dag geçidi, 2200-2500m, 19.7.1976 1 spec., (HK); Hakkâri, Çukurca, 14.6.1976, 2 specs.; Isparta, Egridir, Kovada, 5.73, 1 spec., (HK); Kahramanmaras, Maras, 11.6.1985, 1 spec.; Karaman, 2.7.1980, 1 spec.; Kars, Ardahan, 6.7.1975, 4 specs., (DE); Kars, Ardahan, Posof, 29.6.1993, 2000m, 1 spec., (DE); Kars, Ardahan, Hanak, 1900-2100m, 7.8.1970, 2 specs., (DE); Kars, Karakurt, 1.7.97, 3 specs. (CSAL); Kars, Sarikamis, 28.6.1997, 7 specs. (CSAL); Kars, Sarikamis, 2000m, 21.6.1994 and 7/11.6.1998 8 specs.; Kars, Sarikamis, 2000-2200m, 26.7.1983 and 3.8.1985, 4 specs., (DE); Kars, Sarikamis, 15.7.1982, 2 specs.; Kastamonu, Cide, 9.6.1980, 2 specs.; Kastamonu, Ilgaz Mts, 7.8.1996, 2 specs., (JB); Kirklareli, Lüleburgaz, 29.5.1991, 4 specs., (JB); Kirklareli, Yildiz Mts, Demirköy, 500-900m, 25.6.1997, 2 specs.; Artvin, Kobak, Sarigöl, 14.7.1996, 3 specs., (MZ); Kojedagi geç., 28.6.1994, 14 specs.; Konya, Beysehir Lake, 1.8.1996, 1 spec., (JB); Konya, Doganhisar, 5.7.1980, 2 specs.; Konya, Hadim, 4.7.1980, 1 spec.; Konya, Koçhisar, 29.5.1973, 1 spec.; Konya, Sultan Mts, Cankurtaran, 1800m, 26.5.1996, 1 spec., (MZ); Konya, Sultan Mts, Çay, 1400-2000m., 15.8.1971, 3 specs.; Köseköy, 22.5.1995, 2 specs., (JB); Kütahya, 19.6.1975, 1 spec.; Manisa, Derbent, Dramon, 6.6.1991, 4 specs., (MZ); Mersin, Aydinlar, 1000m, 1 spec. (CMAL); Mersin, Çamliyayla, 29.6.1997, 5 specs., (JB); Mersin, Çamliyayla, Sebil, 2.6.1995, 1 spec., (MZ); Mersin, Çamliyayla 1000-1400m, 3 specs. (CMAL); Mersin, Erdemli, 600-950m, 20.6.1993, 13 specs.; Mersin, Erdemli, Kayaci, 2.5.1994, 1 spec., (JB); Mersin, Namrun, 5.1967, 1 specs.; Mersin, Tarsus, Gamlagaye, 1 spec. (MM); Mus, Buglan geç., 1650m, 2.6.1998, 1 spec.; Nevsehir; Hacibektas, 26.6.1980, 1 spec.; Ordu, Persembe, 8.6.1973, 1 spec.; Samsun, Bafra, 4.6.1973, 5 specs.; Samsun, Karadag geç., 700-900m, 26.6.1983, 1 spec., (HK); Samsun, Karadag Geç., 26.6.1983, 2 specs.; Samsun, Karadag Geç., 700-900m, 26.4.1983, 6 specs., (DE); Samsun, Kavac-Hacilar Gec., 24.6.1997, 4 specs.; Samsun, Ladik, 1.7.1978, 1 spec.; Sarica, 1500m, 9.8.1985, 1 spec., (DE); Siirt, Kurtalan, 23.6.1976, 1 spec.; Sivas, Serefiye, 1900m., 29.6.1992, 4 specs., (DE); Sivas, Zara - Serefiye, 1600m., 23.6.1987, 3 specs., (DE); Tekirdag, 1.6.1978, 8 specs.; Tokat, Almus, 1050-1300m, 29.6.1994, 1 spec.; Tokat, Camlibel Geç., 1600m., 22.6.1987, 1 spec., (DE); Tokat, Zile, 3.7.1978, 1 spec.; Trabzon, 9.6.1973, 1 spec.; Trabzon, Turul, 4.7.1993, 5 specs.; Trabzon, Zigana, 8.7.1978, 2 specs.; Van, Kuzgunkiran Geç., 1.7.1997, 2 specs., (JB); Van, Kuzgunkiran, Gevas, 2300m, 23.7.1985, 1 spec., (DE); Yozgat, Sarikaya, 14.7.1963, 1 spec.; Zonguldak, Çaycuma, 16.7.1979, 1 spec.; Zonguldak, Ulus, 17.7.1979, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature. The species probably feeds on weeds (Asteraceae?). We can assume that the present species has affinities with *C. hypochaeridis* s. l. in regards to the ecological features.

SOURCES: Weise, 1893; Escherich, 1897; Bodemeyer, 1900; Berti & Rapilly, 1973; Tomov & Gruev, 1975; Medvedev, 1983; Tomov, 1984; Gruev & Tomov, 1984; Lopatin, 1981, 1984; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) flavipes Fabricius, 1781

Cryptocephalus flavipes Fabricius, 1781:146.

TERRA TYPICA: Italy.

SYNONYM: *Cryptocephalus wydleri* Faldermann, 1837.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Israel; Iran; Central Asia; Siberia; Turkey.

DISTRIBUTION IN TURKEY: Amasya; Artvin; Aydin; Bolu; Bursa; Çanakkale; Erzurum; Eskisehir; Gaziantep; Istanbul; Kastamonu; Kars; Malatya; Mersin; Ordu; Samsun;

Sinop; Tokat; Tunceli; Trabzon.
Material examined: Amasya, Merzifon, 25.5.1978, 2 specs.; Ankara, Karagöl, 7.7.1978, 1 spec.; Artvin,Yalnizcam geç., 2700m, 10.6.1998; Bolu, Mengen, 26.5.1980, 1 spec.; Bursa, Uludag, 31.5.1971, 1 spec.; Çankiri, Çerkes, 22.6.1997, 1 spec.; Izmit, 25.4.1975, 1 spec.; Kars, Sarikamis, 2000m, 7.6.1998,4 specs.; Mersin, Çamliyayla, 1300m, 1.7.1993, 2 specs.; Mersin, Namrun, 5.1967, 3 specs.; Rize, Ikizdere, 500-1000m, 25.7.1997, 1 spec.; Rize, Ikizdere, 1000-1500m, 25.6.1997, 1 spec.; Tokat, Almus, 2.7.1978, 1 spec.; Yozgat, Çökerek, 13.6.1978, 1 spec.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. Polyphagous, it is found routinely on Salicaceae, Corylaceae, Fagaceae, Rosaceae and Betulaceae.

SOURCES: Bodemeyer, 1900; Medvedev, 1970; Ogul, 1970; Berti & Rapilly, 1973; Tomov & Gruev, 1975; Lopatin, 1977; Tomov, 1984; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) fulmenifer Reitter, 1889
Cryptocephalus fulmenifer Reitter, 1889: 376.

TERRA TYPICA: Caucasus.

SYNONYMS: *Cryptocephalus undatus* Suffrian, 1853; *Cryptocephalus phaleratus* Suffrian, 1853; *Cryptocephalus tigrinus* Berti & Rapilly, 1979.

GENERAL DISTRIBUTION: Caucasus; Iran; Turkey.

DISTRIBUTION IN TURKEY: Araxes valley.
MATERIAL EXAMINED: Adiyaman, Karadut, Nemrut Mts, 1700m, 9/12.7.1997, 2 specs., (JB); Diyarbakir (Elâzig), Ergani - Maden, 3.9.1939, 1 spec., (MNHG).

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Berti & Rapilly, 1979; Lopatin, 1985.

Cryptocephalus (Cryptocephalus) gloriosus Mulsant, 1853
Cryptocephalus gloriosus Mulsant, 1853: 159.

TERRA TYPICA: Karaman (Turkey).

TAXONOMIC REMARKS: We could not examine types of this species. According to Lopatin (1965) it may belong to the subgenus *Asionus*.

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: The species has been reported from the type locality only.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Marseul, 1875.

Cryptocephalus (Cryptocephalus) ilicis Olivier, 1808
Cryptocephalus ilicis Olivier, 1808: 801.

TERRA TYPICA: "Orient".

SYNONYMS: *Cryptocephalus siculus* Herrich-Schäffer, 1836.

GENERAL DISTRIBUTION: Jordan; Syria; Balcan Peninsula; Sicily; Turkey.

DISTRIBUTION IN TURKEY: Balikesir; Istanbul.

MATERIAL EXAMINED: Bursa, 18.5.1973, 1 spec.; Izmir, Bergama, 1.5.1990, 1 spec., (JB); Izmir, Bayindir, 24.4.1973, 2 specs.; Kirklareli, Lüleburgaz, 8.5.1975, 2 specs.; Konya, Sultanyayla, 2.6.1972, 1 spec.; Manisa, Manisa Mt., 5.1994, 1 spec., (JB); Öres, 6.7.1982, 2 specs..

BIOLOGICAL NOTES: On *Crataegus* sp., according to label data. Probably associated with the tree layer (*Quercus* spp.).

SOURCES: Pic, 1900, 1908; Ganglbauer, 1905; Sassi, 1995; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) imperialis Laicharting, 1781

Cryptocephalus imperialis Laicharting, 1781; 179.

LOCUS TYPICUS: Bolzano (Italy).

SYNONYM: *Cryptocephalus bistripunctatus* Germar, 1824.

GENERAL DISTRIBUTION: Europe; Caucasus; Iran; Turkey.

DISTRIBUTION IN TURKEY: Amasya; Erzurum; Konya.
MATERIAL EXAMINED: Usak, 12.6.1972, 1 spec.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. Polyphagous, on Corylaceae, Betulaceae, Fagaceae and Rosaceae.

SOURCES: Weise, 1901; Medvedev, 1975, 1983; Medvedev & Roginskaia, 1988; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) janthinus (Germar, 1824)

Cryptocephalus janthinus Germar, 1824: 555.

TERRA TYPICA: Germany.

SYNONYMS: *Cryptocephalus megaloderus* Faldermann, 1830; *Cryptocephalus rusticus* Faldermann, 1837.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Iran; Central Asia; Siberia; Turkey.

DISTRIBUTION IN TURKEY: Çanakkale; Eskisehir; Mersin.
MATERIAL EXAMINED: Eskisehir, Bozüyük, 17.8.1967, 2 specs. (USR); Kumlona, 28.8.1979, 1 spec.; Kirklareli, Pinarhisar, 7.7.1972, 1 spec.

BIOLOGICAL NOTES: Meadow hygrophilous species; probably polyphagous. *Lysimachia vulgaris, Lythrum salicaria, Phragmites communis* are probable host plants.

SOURCES: Ogul, 1970; Berti & Rapilly, 1973; Tomov & Gruev, 1975; Tomov, 1984; Lopatin, 1977; Warchalowski, 1991.

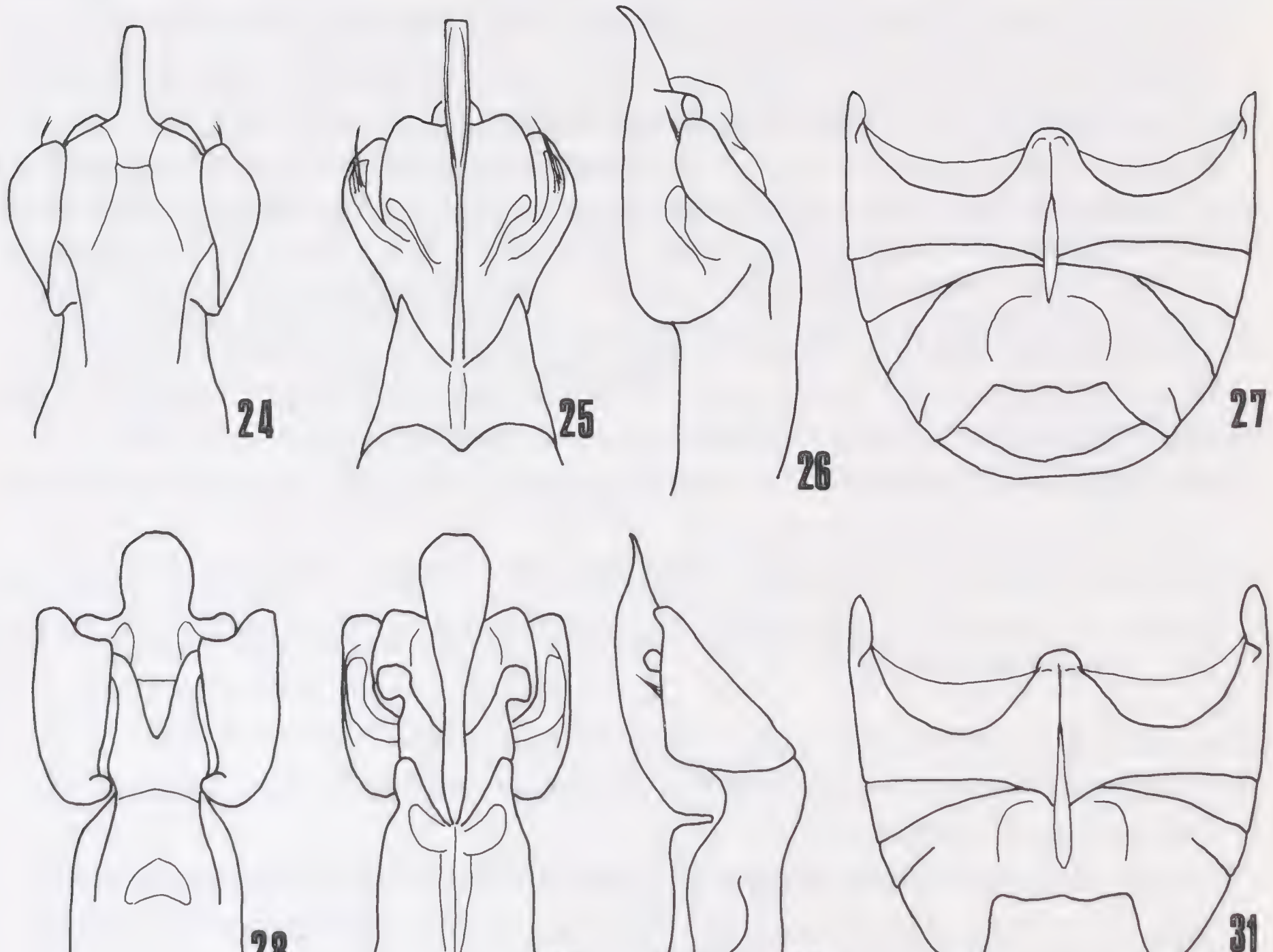
Cryptocephalus (Cryptocephalus) moraei (Linné, 1758)

Chrysomela Moraei Linné, 1758: 374.

TERRA TYPICA: Europe.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Iran; Jordan; Western Siberia; Turkey.

DISTRIBUTION IN TURKEY: Bilecik; Bolu (1400-1600m); Bursa; Diyarbakir; Erzincan; Erzurum; Giresun; Gümüshame; Izmir; Kars; Kastamonu (1800-2300m); Samsun.
MATERIAL EXAMINED: Adana, Bahce, 7.6.1984, 1 spec.; Adana, Gulek, Derekenar, 7.6.1978, 1



Figs 24-26; 28-30; 32-34: aedeagus, (scale: 1.61 mm). Figs 27; 31; 35: abdomen in ventral view, (scale: 2.82 mm). 24-27*: Cryptocephalus euchirus* Kraatz (Iran); 28-31: *C. moehringi* Weise (Amasia, Turkey, Lectotypus); 32-35: *C. wehnkei* Weise (Imrasan geçidi, Antalya, Turkey).

spec.; Adapazari, 15.7.1972, 1 spec.; Adapazari, Hendek, 14.7.1972, 8 specs.; Adapazari, Sapanca, 15.7.1972, 2 specs.; Afyonkarahisar, Sincanli, 13.6.1972, 1 spec.; Akarsen, 1500m, 8.8.1971, 1 spec.; Ankara, Karagöl, Çubuk, 30.6.1979, 1 spec.; Artvin, 12.6.1978, 1 spec.; Bitlis, Tatvan, 9.7.1977, 1 spec.; Bolu, Mengen, 14.8.1979, 1 spec.; Bursa, 30.5.1971, 18.7.1972 and 20.5.1973, 3 specs.; Bursa, Inegöl, 19.6.1975, 2 specs.; Bursa, Orhangazi, 2.6.1971, 1 spec.; Bursa, Uludag, 18.7.1972, 1 spec.; Eregli, 16.7.1979, 1 spec.; Gümüshane, 11.7.1978, 1 spec.; Hakkâri, Çukurca yol ayrimi, 11.6.1975, 1 spec.; Izmir, Agamemnon, 10.5.1975, 2 specs.; Karatas, 5.1967, 1 spec.; Kars, Sarikamis, 2000-2100m), 8.6.1987, 1 spec.; Kirklareli, 24.7.1973, 2 specs.; Konya, Doganhisar, 5.7.1980, 2 specs.; Mersin, Çamliyayla, 29.6.1997, 2 specs., (JB); Mugla, Seki, 9.6,1973, 2 specs.; Ordu, Kumru, 13.7.1978, 1 spec.; Rize, Hayrat, 10.6.1973, 1 spec.; Samsun, Bafra, 4.6.1973, 3 specs.; Rize, 10.6.1973, 1 spec.; Samsun, Kavac, Hacilar Geç., 24.6-3.7.1998, 1 spec., (CSAL); Trabzon, 12.7.1972, 1 spec.; Trabzon, Macka, 27.6.1997, 1 spec., (JB); Tunceli, 1100m, 15.6.1986, 1 spec.; Zonguldak, Çaycuma, 31.5.1980, 1 spec.; Zonguldak, Ulus, 29.5.1980, 1 spec.

BIOLOGICAL NOTES: Meadows mesophilous species; oligophagous, it probably feeds only on *Hypericum* spp. (Guttiferae).

SOURCES: Sahlberg, 1913; Burlini, 1956; Ogul, 1970; Tomov & Gruev, 1975; Gruev & Tomov, 1979; Rapilly, 1980; Tomov, 1984; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) octacosmus Bedel, 1891

Cryptocephalus octacosmus Bedel, 1891: 131, nomen novum.

TERRA TYPICA: Toscana (Italy).

SYNONYM: *Cryptocephalus sexpustulatus* Rossi, 1790: 97, nec Villers, 1789: 156.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Central Asia; Western Siberia; Western China; Turkey.

DISTRIBUTION IN TURKEY: Ankara; Bayburt; Bilecik; Bolu; Denizli; Erzurum; Eskisehir; Isparta; Izmir (as *C. sexpustulatus* Rossi, 1790); Konya; Tokat.

MATERIAL EXAMINED: Adana, Tufanbeyli, 5.6.1984, 2 specs.; Adapazari, Sapanca, 15.7.1972, 1 spec.; Antalya, Saklikent, 1860m, 26.7.1985, 1 spec.; Bolu, Seben, 12.7.1978, 5 specs.; Bursa, Cagliyan, 10/14.7.1997, 1 spec., (JB); Çankiri, Çerkes, 23.7.1979, 1 spec.; Diyarbakir, 12.6.1972, 2 specs.; Eskisehir, Mahmudiye, 8.7.1979, 1 spec.; Gümüshane, Maden, Kop Dag geçidi, 1700-2300m, 12.7.1987, 1 spec.; Isparta, Anamas, 3 specs.; Kayseri, Bünyan, 19.6.1978, 1 spec.; Kirklareli, Lüleburgaz, 1.6.1975, 1 spec.; Manisa, Bakir, 12.6.1972 and 11.6.1976, 2 specs.; Mardin, Emerli, 12.6.1972, 2 specs.; Mus, Karakütük, 12.6.1975, 2 spec.; Mus, Solhan, 15.6.1975, 1 spec.; Nevsehir, Ürgüp, 29.5.1973, 1 spec.; Nigde, Çamardi, 29.6.1980, 1 spec.; Nigde, Ulukisla, 1.7.1980, 2 specs.; Pinarhisar, 7.7.1972 and 3.6.1975, 3 specs.; Samsun, Lâdik, 1.7.1978, 2 specs.; Sivas, 18.6.1978, 1 spec.; Sivas, Ilica, Yildizeli, 14.7.1979, 2 specs.; Tekirdag, 1.6.1975, 1 spec.; Tunceli, Pulumur geçidi, 1350-1900m, 6.7.1987, 1 spec.; Zonguldak, Bartin, 31.5.1980, 2 specs..

BIOLOGICAL NOTES: The old data for *Fraxinus*, *Alnus* and other trees and bushes (Marseul, 1875) should be dismissed. It is a meadow hygrophiious species and *Sanguisorba officinalis* is presently the only ascertained food-plant (Duhaldeborde, 1994).

SOURCES: Escherich, 1897; Weise, 1901; Sahlberg, 1913; Burlini, 1956; Ogul, 1970; Medvedev, 1973; Tomov & Gruev, 1975; Medvedev, 1975; Lopatin, 1977; Tomov, 1984; Warchalowski, 1991; Duhaldeborde, 1994; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) octomaculatus Rossi, 1790

Cryptocephalus octomaculatus Rossi, 1790: 96.

TERRA TYPICA: Toscana (Italy).

SYNONYMS: *Cryptocephalus quinque punctatus* Harrer, 1784 nec Scopoli, 1763; *Cryptocephalus 12 punctatus* Fabricius, 1792.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Central Asia; Southern Siberia; Turkey.

DISTRIBUTION IN TURKEY: Konya.
MATERIAL EXAMINED: Konya, Aksehir, 1200m, 5.8.1967, 2 specs., (USR); Mersin, Namrun, 35 Km NNW of Tarsus, 20/22.7.1997, 1 spec., (JB).

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. This species feeds on *Quercus* spp. Older authors reported several other genera which need confirmation (*Carpinus, Corylus* and *Populus*).

SOURCES: Ogul, 1970; Tomov, 1984; Warchalowski, 1991; Mohr, 1997.

Cryptocephalus (Cryptocephalus) octopunctatus (Scopoli, 1763)

Buprestis Octopunctata Scopoli, 1763: 67.

TERRA TYPICA: not recorded.

SYNONYMS: *Cryptocephalus variabilis* Schneider, 1791; *Cryptocephalus potaissiae* Csiki, 1953.

GENERAL DISTRIBUTION: Europe; Ukraine; Central Asia; Western Siberia.

DISTRIBUTION IN TURKEY: Ankara.
MATERIAL EXAMINED: Adapazari, 1924, (MV); Tokat, Almus 1050-1300m, 19/29.6.94 1 spec.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. Polyphagous, on Salicaceae, Betulaceae, Rosaceae and Fagaceae.

SOURCES: Escherich, 1897; Ogul, 1970; Lopatin, 1977; Gruev & Tomov, 1984.

Cryptocephalus (Cryptocephalus) paphlagonius n. sp.

The species is very similar to *Cryptocephalus sericeus* Linné and *Cryptocephalus globicollis* Suffrian which the examined specimens were generally attributed to, when identified. In our opinion ancient reports of *C. globicollis* from Amasya and Konya (Weise, 1884 ; 1901) must be assigned to the present species.

LOCUS TYPICUS. Çamlibeli Geçidi (Sivas, Turkey).

DISTRIBUTION IN TURKEY. Amasya; Ankara; Artvin; Bilecik; Erzincan; Erzurum; Eskisehir; Kahramanmaras; Kars; Konya; Kütahya; Sivas; Van.
DERIVATIO NOMINIS. From the name of the ancient region of Northern Turkey.

MATERIAL EXAMINED. Holotype (housed in Museo Civico di Storia Naturale, Milano): Anatolien, Sivas, Çamlibeli Geçidi, 1500m, 30.7.1988, 1 ♂. Paratypes: Cerkes (30 Km E), Kursunlu, 27.7.1996, 1 ♂, (MZ); Çubuk, 3.8.1979, 1 ♂, (coll. Sassi); Artvin, Yusufeli, Altiparmak, 1400-1800m, 20/22.7.1983, 2 ♀♀, (MM and DE); Artvin, Yusufeli, Altiparmak, 1400-1800m, 4/8.8.1984, 2 ♀♀, (coll. Sassi and MV); Obere Waldzone bei Altiparmak, 1500-1900m, 6/7.8.1978, 1 ♂, (DE); Artvin, Yusufeli, Ögdam, 1700m, 4.8.1984, 1 ♂, (DE) and 1 ♀, (USR); Bilecik, Osmaneli, 500m, 14.7.1972, 1 ♂, (coll. Sassi);

Umg. Pazaryeri, (Bilecik), 1.8.1984, 1 ♂, (coll. Sassi); Pülümür, Erzincan, 23/25.7.1988, 1 ♂, (DE); Akaysu, westl. Refahiye, 1800m, (Dumanle-dig), 18.VII.1985, 1 ♂, (DE); Pass 2400m zw. Ispir u. Ovacik, 22.8.1972, 2 ♂♂, (DE); Pass bei Askale, westl. Erzurum, 26.7.1988, 1 ♂, (Muséum national d'Histoire naturelle, Paris); Erzurum, 2300-2500m, 14.7-2.8.77, 1 ♂, (HK); Erzurum, Nord Ispir, 1750/1900m, 11.6.1998, 1 ♂, (coll. Sassi); Kackar-Sudseite bei Hevek, (Meretet-yayla), 2000-2500m, 21.7.1983, 1 ♂, (DE); Eskisehir, Sögüt, 25.7.1988, 2 ♂♂, (HK); Konya, Sultan Mts, Çay, 15.8.1971, 1400-2000m, 2 ♀♀, (DE); Bozkir, Hadim, 21.6.94, 1 ♂, (MZ); Manisa, Boz dag, 1500m, 7.1973, 1 ♂, (coll. Sassi); Manisa, Boz dag, 30.7.1972, 1 ♂, (coll. Sassi); Umg. Kütahya, 1 ♂, (coll. Sassi); Dumlupinar, 29.7.1997, 1 ♂, (coll. Kismali); Samsun, betw. Samsun and Kavak, 300m, 11.7.1976, 1 ♂, (USR); Sarigel (25 Km N), Bicakcilar, 13.7.1996, 1 ♂, (coll. Sassi); Sivas, Çamlibeli geç., 1500m; 30.7.1988, 2 ♀♀, (coll. Sassi and HK); Sivas, Pagabahçe, 1250m, 15.7.1979, 1 ♀, (coll. Kismali); Pass 2300 West Gevas, (Kuzgunkiran geç.), 13.7.1985, 1 ♂, (MV); Pass 2300 West Gevas, (Kuzgunkiran geç.), 23.7.1985, 2 ♂♂, (coll. Kismali and DE) and 1 ♀, (DE); Tarmanli geçidi, Nordl Van, 29.7.1988, 1 ♀, (DE); Beytepe, 11.9.1977, 1 ♂, (coll. Sassi).

DESCRIPTION OF MALES. Body 6.56 (± 0.19) mm long by 3.99 (± 0.12) mm, stout, stocky, convex, entirely metallic green. Antennae dull and blackish with the first segment shiny green.

Frons smooth or slightly concave, closely and strongly punctured, with dense hairs. Antennae rather short, slender, second segment 1,3 times as long as wide, 6th - 11th segment equal in lenght.

Pronotum strongly convex, bulging, at base 1.34 as wide as long, forecorners with some scattered hairs; punctation strongly impressed and regularly distributed; interspaces between punctures almost shiny; lateral margins narrow, visible simultaneously only at base; not broadening toward hindcorners.

Scutellum raised, as long as wide, slightly punctured, truncate at apex. Elytra 1.7 times as long as pronotum and 1.14 times as long as wide at humeri, squared, parallelsided, convex, with more elevated postscutellar area, strongly and irregularly punctate; punctures on slope slightly smaller than in median part of disc; the intervals between the elytral punctation slightly convex and sparingly micropunctured; humeral tubercles prominent, lengthened; margins of elytra simple, barely visible from above. Epipleura with sparse punctures.

Pygidium regularly convex in middle, with deep and dense punctation and covered with rather dense withish hairs as well the abdomen and legs. Legs and ventrites metallic green. Anal sternite in males with a transverse depression; posterior margin of anal sternite straight or slightly notched. Fore basitarsi in males only slightly enlarged and rather short. Apex of aedeagus (figures 36-38) triangular, clearly sinuate; fraena of endophallus triangular.

DESCRIPTION OF FEMALES. Body 7.70 (± 0.39) mm long by 4.68 (± 0.28) mm. Pronotum more transverse, at base 1.43 times as wide as long. Elytra are 1.8 times as long as pronotum and 1.2 times as long as wide at humeri. Spermatheca (figure 46) sickle shaped; proximal part swollen; apex fairly tapered; gland tubular, without constrictions; ductus not coiled.

TAXONOMIC REMARKS. The species is closely related to *Cryptocephalus sericeus* Linné from which it differs in generally more slender apex of aedeagus; in finer pronotal punctation

and shiny intervals; in lateral margin of pronotum narrower and not enlarged toward hind corners; in lacking the bilobate tubercle above the depression of male anal sternite.

It is also very similar to *Cryptocephalus globicollis* Suffrian from which it differs in stouter body outline, in generally more impressed punctures on pronotum, in lacking the rounded pit above the transverse depression on male anal sternite, in the shape of first sclerite of internal sac (figures 39-42), that has a generally less pointed and less outwardly flexed apical denticle and the anterior median margin regularly curved, without the additional denticle usually present in *C. globicollis* (figures 43-45).

BIOLOGICAL NOTES. Collected on *Astragalus* and *Centaurea*, according to labels data.

Cryptocephalus (Cryptocephalus) paradisiacus Weise, 1900

Cryptocephalus paradisiacus Weise, 1900: 276.

LOCUS TYPICUS: Mardin.

GENERAL DISTRIBUTION: Endemic species from Turkey.

DISTRIBUTION IN TURKEY: recorded from the type locality only.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: No data were found in the literature.

TAXONOMIC REMARKS: Type series seems to be lost, but on the basis of the original description *C. paradisiacus* could be a junior synonym of the very variable *Cryptocephalus cribratus* Suffrian.

Cryptocephalus (Cryptocephalus) parvulus Müller, 1776

Cryptocephalus parvulus Müller, 1776: 58.

TERRA TYPICA: Denmark.

SYNONYMS: *Cryptocephalus nigrocoeruleus* Goeze, 1777; *Cryptocephalus flavilabris* Fabricius, 1787; *Cryptocephalus coeruleus* Olivier, 1791.

GENERAL DISTRIBUTION: Europe; Iran; Central Asia; Siberia; Turkey.

DISTRIBUTION IN TURKEY: Bursa; Konya; Samsun.

MATERIAL EXAMINED: Burdur, Aglasun, 15.7.1972, 1 spec.

BIOLOGICAL NOTES: Meso-hygrophilous species, associated with the tree layer. Polyphagous, it has been recorded from Salicaceae, Corylaceae, Fagaceae and Betulaceae.

SOURCES: Weise, 1901; Tomov & Gruev, 1975; Medvedev, 1975; Lopatin, 1977; Rapilly, 1980;

Cryptocephalus (Cryptocephalus) pelleti Marseul, 1875

Cryptocephalus Pelleti Marseul, 1875: 183.

TERRA TYPICA: Eastern Pyrenees.

SYNONYM: *Cryptocephalus androgyne* Marseul, 1875.

GENERAL DISTRIBUTION: France; Corse; Spain (Warchalowski, pers. comm.), Iran; Italy ? (as *C. androgyne*); Greece ? (as *C. androgyne*).The actual distribution of this species is at present poorly known, as it is quite recently removed from synonymy with *C. caerulescens.* According to Rapilly (1979) it is possible that *C. caerulescens* would be con-

fined to Northern and Central Europe, and reports from Mediterranean Region, Transcaucasus and Central Asia might have to be referred to the present species.

DISTRIBUTION IN TURKEY: **new to Turkey**.
MATERIAL EXAMINED: Artvin, Damar, Murgul, 1.8.1997, 1 spec., (JB); Bursa, Ulu Dag, 800m, 25.5.1981, 3 specs., (USR); Erzurum, Narman, Devrekani, 19.7.1979, 1 spec.; Kars, Göle, 1700-1900m, 9.7.1987, 1 spec., (USR).

BIOLOGICAL NOTES: Mesophilous or hygrophilous species, associated with the tree layer (*Salix*).

SOURCES: Marseul, 1875; Apfelbeck, 1901; Berti & Rapilly, 1973; Lopatin, 1977; Rapilly, 1979; Warchalowski, 1991.

Cryptocephalus (Cryptocephalus) peyroni Marseul, 1875
Cryptocephalus Peyroni Marseul, 1875: 169.

LOCUS TYPICUS: Beirut (Lebanon).

GENERAL DISTRIBUTION: Syria; Lebanon; Jordan; Israel; Turkey.

DISTRIBUTION IN TURKEY: Artvin.
MATERIAL EXAMINED: Hatay, Çevlik, Samandag, 23/26.4.1994, 4 specs., (JB) and (MZ); Hatay, Tranepinar, 22/23.4.1994, 1 specs., (JB).

BIOLOGICAL NOTES: On *Pistacia palaestina* Boiss. according with Lopatin & Chikanutov (1997).

SOURCES: Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997a, 1997b.

Cryptocephalus (Cryptocephalus) praticola Weise, 1889
Cryptocephalus praticola Weise, 1889: 1.

TERRA TYPICA: Caucasus.

GENERAL DISTRIBUTION: Caucasus; Ukraine; Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Erzurum; Artvin.
MATERIAL EXAMINED: Kirklareli, Yildiz Mts., Demirköy, 500/900m, 25.6.1997, 1 spec.; Samsun, 3.7.1993, 3 specs..

BIOLOGICAL NOTES: no data.

TAXONOMIC REMARKS: A substantial revision of the species of the *C. hypochaeridis* complex is being printed. Because of the problems within these species, the real distribution of the present taxon is scarcely known.

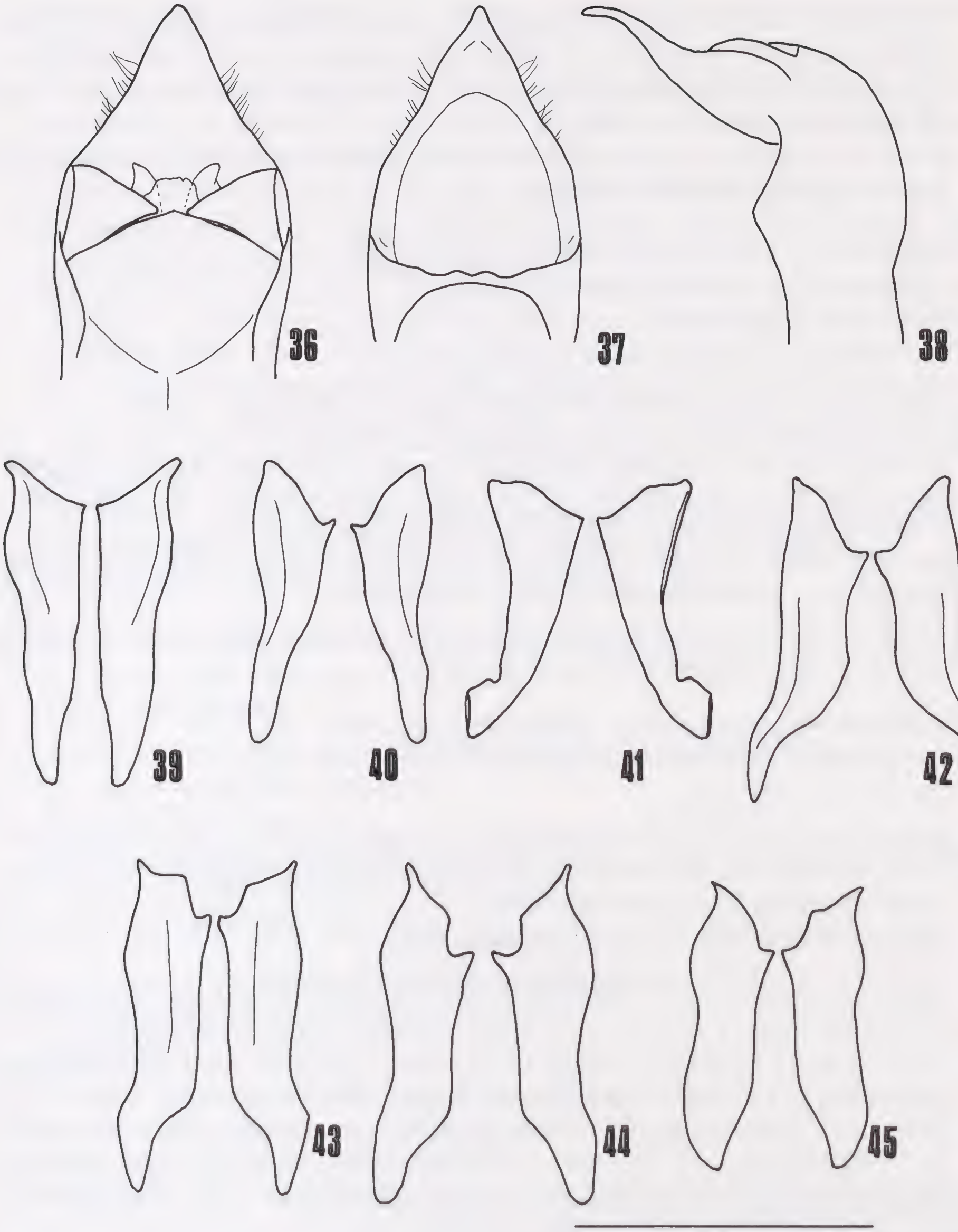
SOURCES: Aslan & Özbek, 1997a, 1997b.

Cryptocephalus (Cryptocephalus) quadriguttatus Richter, 1820
Cryptocephalus quadriguttatus Richter, 1820: 12.

TERRA TYPICA: not recorded.

GENERAL DISTRIBUTION: Eastern Europe; Ukraine; Caucasus; Central Asia; Western Siberia; Turkey.

DISTRIBUTION IN TURKEY: Turkey (without any explicit locality).
MATERIAL EXAMINED: none.



Figs 36-38: aedeagus, (scale: 1.61 mm). Figs 39-45: First sclerite of endophallus, (scale: 0.99 mm). 36-42: *Cryptocephalus paphlagonius* n. sp. (36-38 and 40: Sivas, holotypus; 39: Mts Kackar; 41: Bilecik; 42: Pülümür). 43-45: *C. globicollis* Suffrian (43-44: Alpes Maritimes, France; 45: Eastern Pyrenees).

BIOLOGICAL NOTES: Biology of this species is very poorly known. Burlini (1956) reported *Pinus* and *Alnus* as possible host plants, also collected on S*alix, Populus* and *Rosa* according to Medvedev & Roginskaia, (1988). It could be defined a mesophilous species associated with the tree layer.

SOURCES: Apfelbeck, 1916; Burlini, 1956; Ogul, 1970; Lopatin, 1977; Medvedev & Roginskaia, 1988; Warchalowski, 1991.

Cryptocephalus (Cryptocephalus) rugicollis Olivier, 1791

Cryptocephalus rugicollis Olivier, 1791: 611.

TERRA TYPICA: Var (France).

SYNONYM: *Cryptocephalus virgatus* Suffrian, 1847.

GENERAL DISTRIBUTION: Southern Europe; Jordan; Northern Africa; Turkey.

DISTRIBUTION IN TURKEY: Amasya; Antalya; Aydin; Mugla; Izmir.

MATERIAL EXAMINED: Aydin, Söke, 20m, 4.5.1991, 2 specs., (USR); Izmir, 1 spec.; Izmir, Cesme ilica, 13.4.1979, 1 spec.; Izmir, Efes, 3.5.1963, 1 spec.; Izmir, Yenisakran, 28.4.1984, 3 specs. (USR); Makri, Taurus, 6 specs.; Manisa, Manisa Mt., 5.1994, 1 spec., (JB).

BIOLOGICAL NOTES: Xerophilous species, strictly associated with the Mediterranean belt. Oligophagous, it feeds on various genera of Asteraceae.

SOURCES: Sahlberg, 1913; Kocher, 1958; Tomov & Gruev, 1975; Medvedev, 1975; Lopatin & Chikanutov, 1997; Aslan & al., 1977.

Cryptocephalus (Cryptocephalus) ruguliventris Franz, 1949

Cryptocephalus hypochoeridis ssp. *ruguliventris* Franz, 1949: 185.

TERRA TYPICA: Georgia.

TAXONOMIC REMARKS: A substantial revision of the species of the *C. hypochaeridis* complex is being printed. Because of the problems within these species, the real distribution of the present taxon is scarcely known.

GENERAL DISTRIBUTION: Caucasus; Romania; Turkey.

DISTRIBUTION IN TURKEY: Artvin (1000m); Rize (1200-1400m).

MATERIAL EXAMINED: Artvin, 12.6.1973, 1 spec.; Artvin, 23.6.1990, 3 specs., (DE); Artvin, Artvin-Yusufeli, 500-1000m, 2 specs.; Artvin, Pass between Murgul and Arhavi, 1000-1200m, 6.8.1973, 1 specs., (DE); Artvin, Karçkal-Otingöl, 600m 20.7.1987, 1 spec., (DE); Artvin, Karçkal-Otingöl, 1800-2300m, 11.8.1978, 1 spec., (DE); Artvin, Savsat, 1300-1600m, 6.8.1970, 1 spec., (DE); Artvin, Yusufeli, Altiparmak, 1400-1800m., 20.7.1983, 5 specs., (DE); Erzurum, Kackar Mt., Heyek, 2000-2500m, 21.7.1983, 1 spec., (DE); Kars, 6.7.1975, 2 specs., (DE); betw. Artvin and Rize, Mt. Kaçkar 22.8.1973, 1 spec.; Artvin, Sarigöl, Biçakçilar, 13.7.1996 1 spec. (JB); Rize, Ikizdere, 1000-1500m, 25.6.1997, 2 specs. (CSAL).

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Tomov & Gruev, 1975; Tomov, 1984; Warchalowski, 1991.

Cryptocephalus (Cryptocephalus) sericeus (Linné, 1758)

Chrysomela sericea Linné, 1758: 374.

TERRA TYPICA: not recorded.

SYNONYM: *Cryptocephalus robustus* Suffrian, 1853; *Cryptocephalus bidens* Thomson, 1868.

TAXONOMIC REMARKS: The status of the geographic forms attributed to this species is at present object of revision by one of us (DS). In this work we prefer to consider *C. sericeus* as a single widespread and variable taxon.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Central Asia; Siberia; Turkey.

DISTRIBUTION IN TURKEY: Ankara; Erzurum; Kars (1800m). Some of the records might have to be attributed to *C. paphlagonius* n. sp.

MATERIAL EXAMINED: Artvin, Savsat - Carn Gec., 1000/1500m., 26.6.97, 1 spec. (CSAL); Bozdag, 30.7.1973, 1 spec.; Bursa, Cagliyan, 10/14.7.1997, 1 spec. (JB); Çankiri (Kastamonu), Ilgaz-Dagh, 1800-2000m, 13.8.65, 1 spec., (DE); Izmir, Zeitingdag, 7.1973, 1 specs.; Kars, Ardahan, 6.7.75, 1 spec., (DE); Kars, Ardahan, Hanak, 1900-2100m., 7.8.1970, (DE); Kars, Sarikamis, 28.6.97, 1 spec. (CSAL); Kars, Sarikamis, 2000m, 3.8.1985 1 spec., (DE); Kars, Sarikamis, 2200m., 26.7.1983 e 16.8.1978 2 specs., (DE); Kirklareli, Kiyiköy, 3.6.1975, 2 specs.; Samsun, Samsun - Kavak, 300m, 11.7.1976, 1 spec.; Sivas, 15.7.1979, 1 spec.

BIOLOGICAL NOTES: Meadow mesophilous species, polyphagous but clearly oriented to oligophagy, feeds on Asteraceae and locally on Ranunculaceae and *Knautia*.

SOURCES: Ogul, 1970; Tomov & Gruev, 1975; Lopatin, 1977.

Cryptocephalus (Cryptocephalus) sexpunctatus (Linné, 1758)

Chrysomela 6-punctata Linné, 1758: 375.

TERRA TYPICA: Europe.

GENERAL DISTRIBUTION: Europe; Balkans; Ukraine; Siberia; Japan; Turkey.

DISTRIBUTION IN TURKEY: Erzurum.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Polyphagous and mesophilous, associated with the tree layer (Fagaceae, Betulaceae, Salicaceae; Rosaceae).

SOURCES: Burlini, 1956; Mohr, 1977; Warchalowski, 1991; Aslan & Özbek, 1998.

Cryptocephalus (Cryptocephalus) signatifrons Suffrian, 1847

Cryptocephalus signatifrons Suffrian, 1847: 172.

TERRA TYPICA: not defined.

GENERAL DISTRIBUTION: Southern and Central Europe; Turkey.

DISTRIBUTION IN TURKEY: Erzurum; Malatya.

MATERIAL EXAMINED: Izmit, Kandira, 19.5.1973, 1 spec.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. Polyphagous but with tendency toward oligophagy, it has been prevalently collected on *Corylus* (Corylaceae) and secundarly on *Quercus* (Fagaceae).

SOURCES: Burlini, 1956; Medvedev, 1970; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) surdus Rapilly, 1980

Cryptocephalus surdus Rapilly, 1980: 81.

LOCUS TYPICUS: Hatam-Bak (Khoramabad, Iran).

GENERAL DISTRIBUTION: Syria; Jordan; Iran; Turkey.

DISTRIBUTION IN TURKEY: Turkey (without any explicit locality).
MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Rapilly, 1980; Lopatin & Chikanutov, 1997.

Cryptocephalus (Cryptocephalus) tappesi Marseul, 1868

Cryptocephalus tappesi Marseul, 1868: 206.

LOCUS TYPICUS: Mt. Kulegh (Adana).

SYNONYM: *Cryptocephalus bidens* Suffrian, 1860.

GENERAL DISTRIBUTION: Greece (?); Syria; Lebanon; Turkey.

DISTRIBUTION IN TURKEY: Taurus Mts.
MATERIAL EXAMINED: Adana, Gaziantep, Nurdagi geçidi, 1200m, 19.6.1992, 1 spec., (MZ); Asanly, 5.1994, 5 specs., (JB); Hatay, Cevlik, Samandag, 23.4.1994, 1 spec., (JB); Mersin, Çamliyayla, 7.6.84, 1 spec.; Mersin, Çamliyayla, 950-1400m, 1.6.92 1 spec.; Mersin, Namrun, 5.97, 2 specs..

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Pic, 1904, 1941; Marseul, 1875; Weise, 1893; Lopatin & Chikanutov, 1997.

Cryptocephalus (Cryptocephalus) trimaculatus Rossi, 1790

Cryptocephalus trimaculatus Rossi, 1790: 96.

TERRA TYPICA: Tuscany (Italy).

SYNONYM: *Cryptocephalus salicis* Fabricius, 1792.

GENERAL DISTRIBUTION: Spain; France; Italy; Balkans, Transcaucasus; Syria; Jordan; Egypt; Western Siberia; Turkey.

DISTRIBUTION IN TURKEY: Agri, (1800m); Amasya; Ankara; Artvin; Bursa; Erciyas; Erzurum; Gümüshane; Konya; Mersin; Mugla.
MATERIAL EXAMINED: Adana, Hasanbeyli, 30 Km E of Osmaniye, 17.7.1997, 1 spec., (JB); Adana, Pozanti, 20/29.6.1992, 1 spec., (JB); Antalya, Imrasan Geçidi, 1300m, 9.7.1993 and 22.6.1997, 3 specs.; Bilecik, Lalehan, Sögüt, 20.6.1978, 1 spec.; Eskisehir, Gunele, Sakari Ilica, 6/9.7.1997, 1 spec., (JB); Konya, Pinarbasi, 3.6.1970, 1 spec.; Mersin, 15 Km W Mersin, 1/5.7.1992, 2 specs., (JB); Mersin, Çamliyayla, 1300m, 1.7.1993, 1 spec.; Mersin, Namrun, 35 Km NNW of Tarsus, 20.7.1997, 2 specs., (JB); Mersin, Tasucu, 3.7.93, 1 spec., (MZ); Mersin, Tasucu, 5.1994, 1 spec., (JB); Nevsehir, 28.6.1977, 1 spec.; Zonguldak, Safranbolu, 18.7.1979, 1 spec.

BIOLOGICAL NOTES: Xerophilous species, associated with the tree layer; polyphagous, on Fagaceae, Rosaceae and *Pistacia*.

SOURCES: Escherich, 1897; Bodemeyer, 1900; Ganglbauer, 1905; Tomov & Gruev, 1975; Mohr, 1977; Tomov, 1984; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) turcicus Suffrian, 1847

Cryptocephalus turcicus Suffrian, 1847: 173.

LOCUS TYPICUS: Turkey.

SYNONYM: *Cryptocephalus pistaciae* Suffrian, 1853.

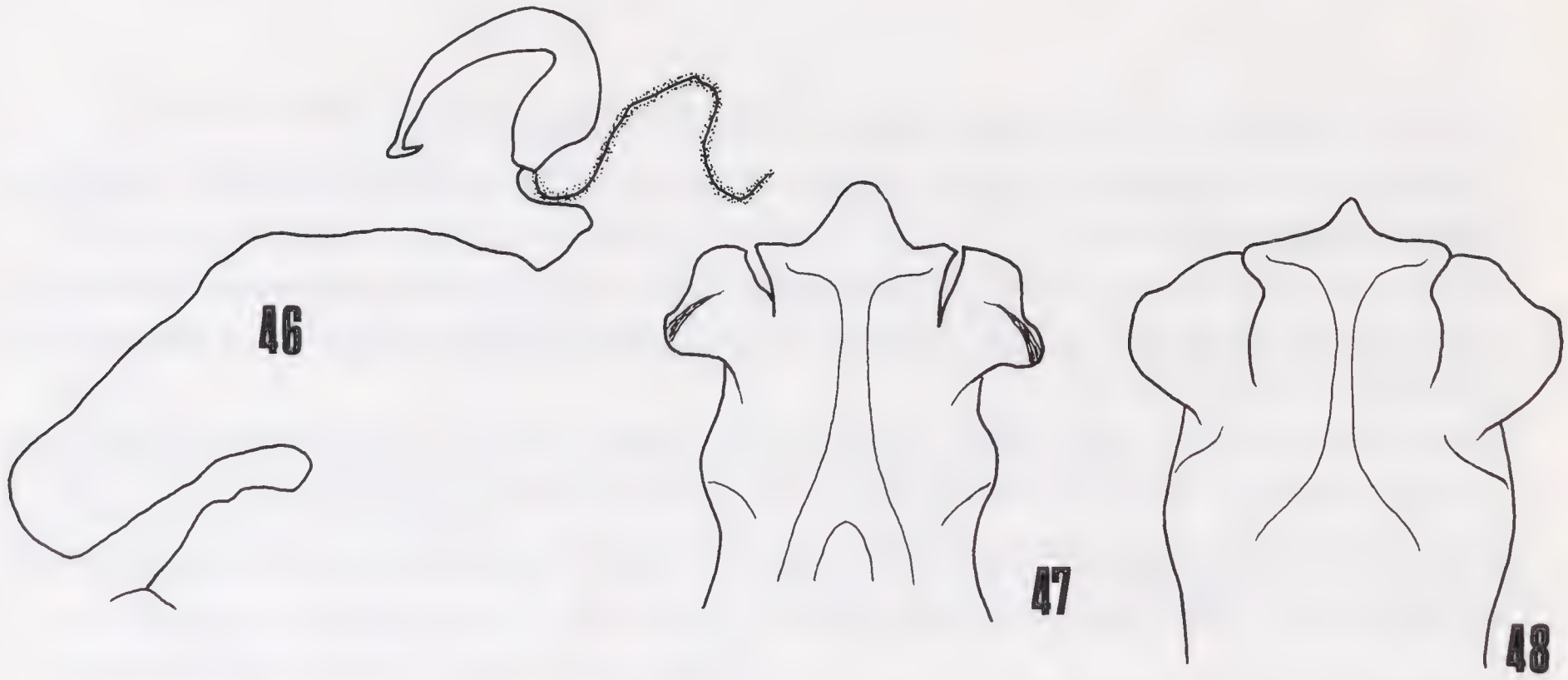


Fig. 46: spermatheca. Figs 47-54: aedeagus. 46: *Cryptocephalus paphlagonius* n. sp. (Sivas), (scale: 1.00 mm); 47: *C. sexpunctatus* Linné (Suisse), (scale: 1.22 mm); *48: C. octopunctatus* Scopoli (Northern Italy), (scale: 1.22 mm); 49: *C. duplicatus* Suffrian (Içel, Turkey), (scale: 1.18 mm); 50: *C. concolor* Suffrian (Mazendaran, Iran), (scale: 1.18 mm); 51: *C. virens* Suffrian (Slovenia), (scale: 1.18 mm); 52: *C. violaceus* Laicharting (Montenegro), (scale: 1.18 mm); 53: *C. biledjekensis* Pic (Izmir, Turkey), (scale: 0.76 mm); 54: *C. cribratus* Suffrian (Bolu, Turkey), (scale: 1.00 mm). Figures 47-52 show aedeagus in ventral view. Figures 53-54 show aedeagus in dorsal view.

GENERAL DISTRIBUTION: Southern Europe; Syria; Jordan; Turkey.

DISTRIBUTION IN TURKEY: Ankara; Antalya; Balikesir; Bilecik; Bursa; Eskisehir; Istanbul; Mataraci; Trabzon.

MATERIAL EXAMINED: Ankara, Kizilcahamam, 9.6.1978, 5 specs.; Burdur, Aglasun, 28.4.1972, 1 spec.; Çankiri, Çerkes, 22.6.1997, 2 specs. (CSAL); Isparta, Egridir, 27.4.1972, 2 specs.; Sivas, Çamlibel, 25.4.1978, 1 spec.

BIOLOGICAL NOTES: Xerophilous species, associated with the tree layer; probably oligophagous, it feeds on Fagaceae (*Quercus*), also collected on *Corylus*.

SOURCES: Bodemeyer, 1900; Medvedev, 1970; Tomov & Gruev, 1975; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Cryptocephalus) virens Suffrian, 1847

Cryptocephalus virens Suffrian, 1847: 125.

LOCUS TYPICUS: Kiew (Ukraine).

TAXONOMIC REMARKS: Among the specimens from Suffrian collection (Martin-Luther Universität, Halle), we could find one male labelled with the number 14372 (handwritten) that corresponds to the following data on Suffrian catalogue: Kiew, Hochhuth. Since data match the original description, we designated the specimen as lectotype of the species.

GENERAL DISTRIBUTION: Central and Eastern Europe; Ukraine; Caucasus; Central Asia; Western Russia; Mongolia; China (?); Turkey.

DISTRIBUTION IN TURKEY: Ankara, Erzurum.

MATERIAL EXAMINED: Gümüshane, Kosedagi geç., 1400-1850m, 12.6.1998, 1 spec.; Kars, Sarikamis, 2000m, 7 and 11.6.1998, 11 specs..

BIOLOGICAL NOTES: Mesophilous species whose biology is poorly known, perhaps associated with the tree layer (Salicaceae), but most likely feeding on herbaceous plants (Asteraceae, *Geranium, Onobrychis*), similar to most related species (*C. violaceus*, *C. sericeus* and *C. hypochaeridis* complex).

SOURCES: Escherich, 1897; Mohr, 1977; Gruev & Tomov, 1984; Medvedev & Roginskaia, 1988; Warchalowski, 1991; Aslan & Özbek, 1998.

Cryptocephalus (Cryptocephalus) volkovitshi Lopatin, 1976

Cryptocephalus volkovitshi Lopatin, 1976: 75.

LOCUS TYPICUS: Arpachaystroy (Il'ichevsk distr., Armenia).

GENERAL DISTRIBUTION: Armenia. We examined several specimens from Garni (Kotayk distr., Armenia, 7.7.1993) and Hatsavan (Abovian distr., Armenia, 14.7.1996).

DISTRIBUTION IN TURKEY: Kars, Araxes valley, 18 Km NW from Idgir (Lopatin, pers. comm.). **new to Turkey.**

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Collected on *Atraphaxis* sp.

SOURCES: Lopatin, 1976.

Cryptocephalus (Burlinius) bilineatus (Linné, 1767)

Chrysomela bilineata Linné, 1767: 597.

TERRA TYPICA: Europe.

SYNONYMS: *Pachybrachis armeniacus* Faldermann, 1837; *Cryptocephalus spitzyi* Suffrian, 1848; *Cryptocephalus partitus* Jacoby, 1885.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Central Asia; Siberia; Korea; Japan; Turkey.

DISTRIBUTION IN TURKEY: Turkey (without any explicit locality).
MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Meadow meso-xerophilous species. Polyphagous but prevalently associated with Asteraceae. Plumbaginaceae (*Statice)* have been reported by older authors, but that data need confirmation.

SOURCES: Winkler, 1929; Ogul, 1970; Lopatin, 1977; Warchalowski, 1991.

Cryptocephalus (Burlinius) chrysopus Gmelin, 1788

Cryptocephalus chrysopus Gmelin, 1788: 1713.

SYNONYMS: *Chrysomela biguttata* Schaller, 1763 nec Scopoli, 1763; *Cryptocephalus Hübneri* Fabricius, 1792.

TERRA TYPICA: Europe.

GENERAL DISTRIBUTION: Central and Southern Europe; Ukraine; Turkey.

DISTRIBUTION IN TURKEY: Samsun.
MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. Polyphagous, it has been found on Rosaceae, Fagaceae, Corylaceae and Salicaceae.

SOURCES: Medvedev, 1970; Ogul, 1970; Gruev & Tomov, 1984.

Cryptocephalus (Burlinius) connexus Olivier, 1807

Cryptocephalus connexus Olivier, 1807: 836.

LOCUS TYPICUS: Stralsund (Germany).

GENERAL DISTRIBUTION: Southern Europe; Ukraine; Caucasus; Syria; Israel; Jordan; Iran; Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Ankara; Artvin; Bilecik; Bursa; Erzurum; Giresun; Isparta (1500m); Izmir; Samsun.
MATERIAL EXAMINED: Adapazari, Hendek, 14.7.1972, 4 specs.; Adapazari, Sapanca, 15.7.1972, 1 spec.; Adiyamam, Desni, 29.7.1977, 1 spec.; Ankara, Dodurga, 13.7.1970, 2 specs.; Bolu, Düzce, 15.7.1979, 7 specs.; Bolu, Yigilca, 15.7.1979, 1 spec.; Bursa, 18.7.1972, 1 spec.; Bursa, Cagliyan, 10/14.7.1997, 2 specs., (JB); Eregli, 16.7.1979, 4 specs.; Gümüshane, 11.7.1978, 2 specs.; Hatay, Harbiye, 6.6.1972, 1 spec.; Kastamonu, Bozkurt, 20.7.1979, 1 spec.; Kastamonu, Çatalzeytin, 20.7.1979, 2 spec.; Kastamonu, Inebolu, 19.7.1979, 5 specs.; Kastamonu, Küre, 19.7.1979, 1 spec.; Kastamonu, Tosya, 4.8.1979, 3 specs.; Kirsehir, Kaman, 18.8.1979, 1 spec.; Ordu, Kumru,13.7.1978, 5 specs.; Samsun, 11.7.1972, 2 specs.; Siirt, Sinan, 9.9.1977, 3 specs.; Tekirdag, 26.7.1973, 1 spec.; Trabzon, Arsin, 1.9.1973, 1 spec.; Zonguldak, 16.7.1979, 3 specs.; Zonguldak, Ulus, 17.7.1979, 1 spec.

BIOLOGICAL NOTES: Xerophilous species, probably associated with the tree layer *(Ulmus)*

and herbaceous plants as well (*Statice*) (Rapilly, 1979). Feeding on *Pistacia lentiscus* in Eastern Mediterranean (according to Lopatin & Chikanutov, 1997).

SOURCES: Ogul, 1970; Lopatin, 1977; Rapilly, 1979; Lopatin, 1981; Tomov, 1984; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Burlinius) elegantulus Gravenhorst, 1807

Cryptocephalus elegantulus Gravenhorst, 1807: 152.

TERRA TYPICA: not recorded.

SYNONYMS: *Cryptocephalus tessulatus* Germar, 1813*; Cryptocephalus jucundus* Faldermann, 1837.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Central Asia; Siberia; Mongolia; Korea; Turkey.

DISTRIBUTION IN TURKEY: Giresun; Konya.

MATERIAL EXAMINED: Ankara, Baglum, Sögüt, 9.7.1977, 3 specs.; Bursa, Cagliyan, 10/14.7.1997, 1 spec., (JB); Hakkâri, Yüksekova, 11.6.1975, 2 specs.; Van, Çaldiran, 13.6.1975, 1 spec.

BIOLOGICAL NOTES: Mesophilous species, predominantly associated with the herbaceous layer, in our opinion; polyphagous, it was collected on Asteraceae and Geraniaceae. Medvedev & Roginskaia (1988) also reported *Artemisia* and shrubs as possible host plants (*Rosa, Prunus).*

SOURCES: Weise, 1901; Winkler, 1929; Burlini, 1956; Ogul, 1970; Lopatin, 1977; Tomov, 1984; Medvedev & Roginskaia, 1988; Warchalowski, 1991.

Cryptocephalus (Burlinius) exiguus Schneider, 1792

Cryptocephalus exiguus Schneider, 1792: 204.

SYNONYMS: *Cryptocephalus wasastjernii* Gyllenhal, 1827; *Cryptocephalus amiculus* Baly, 1873.

TERRA TYPICA: not recorded.

GENERAL DISTRIBUTION: Europe; Ukraine; Western Siberia; Turkey.

DISTRIBUTION IN TURKEY: Bursa.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous species. It seems to live both on herbaceous plans than on the tree layer. Polyphagous (Asteraceae, *Salix*, *Betula, Populus Alnus*).

SOURCES: Burlini, 1956; Medvedev, 1970; Ogul, 1970; Medvedev & Roginskaia, 1988.

Cryptocephalus (Burlinius) fulvus (Goeze,1777)

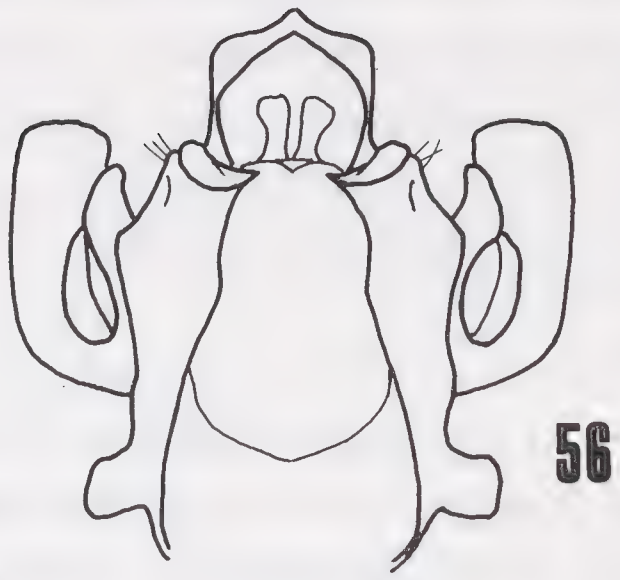
Chrysomela Fulva Goeze, 1777: 321.

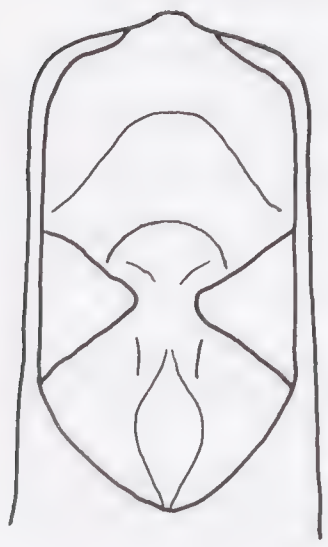
TERRA TYPICA: not recorded.

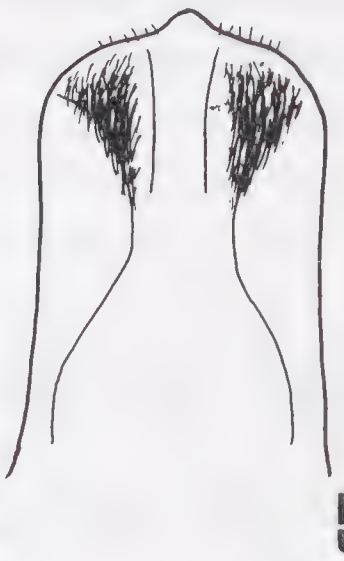
SYNONYMS: *Cryptocephalus minutus* Fabricius, 1792; *Cryptocephalus ochraceus* Stephens, 1829*; Cryptocephalus signaticollis* Suffrian, 1848;

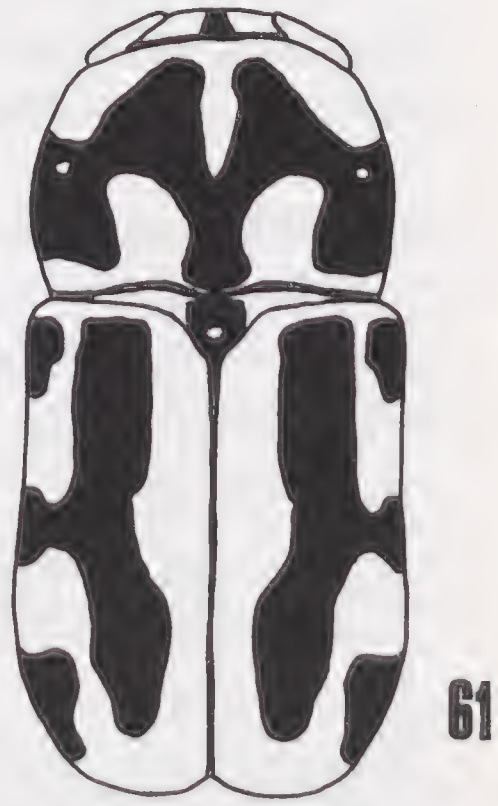
GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Jordan; Israel; Saudi Arabia; Western Siberia; Northern Africa; Turkey.

DISTRIBUTION IN TURKEY: Antalya; Erzincan; Erzurum; Gümüshane; Izmir; Mersin.









Figs 55-60: aedeagus. Fig. 61: dorsal pattern, (scale: 2.00 mm). 55-57: *Cryptocephalus tappesi* Marseul (Mersin, Namrun, Turkey), (scale: 1.54 mm); 58-61: *Pachybrachis pentheri* Ganglbauer (Kayseri, Turkey, Lectotypus), (scale of aedeagus: 0.55 mm).

MATERIAL EXAMINED: Ankara, Ayas, 12.7.1978, 2 specs.; Izmir, Kozak, 21.6.1979, 1 spec.; Manisa, Salihli, 21.5.92, 2 specs., (SZ); Mersin, Silifke, Mamli, 12/15.5.1994, 1 spec., (JB); Mugla, Marmaris, 29.5.1996, 1 spec., (ZMH).

BIOLOGICAL NOTES: Mesophilous species; it can be collected on meadows and on tree layer as well. Polyphagous; host plants belong to several families: Fabaceae, Asteraceae, Fagaceae, Salicaceae, Cistaceae and Labiatae.

TAXONOMIC REMARKS: Burlini (1969) described *Cryptocephalus fulvus* subsp. *schatzmayri* on specimens from Rhodos and Israel. Its range also comprises Jordan and Saudi Arabia, according to Lopatin & Chikanutov (1997). The taxon might occur in Middle Eastern part of the range of *C. fulvus*. In our opinion the status of this taxon needs to

be evaluated in the light of more recent systematic principles. Therefore we prefer provisionally to attribute the Turkish specimens to the nominal form.

SOURCES: Sahlberg, 1913; Ogul, 1970; Burlini, 1969; Medvedev, 1975; Mohr, 1977; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Burlinius) labiatus (Linné, 1761)

Chrysomela labiata Linné, 1761: 169.

TERRA TYPICA: Sweden.

SYNONYM: *Cryptocephalus digrammus* Suffrian, 1848.

GENERAL DISTRIBUTION: Europe; Ukraine; Siberia; Mongolia; Turkey.

DISTRIBUTION IN TURKEY: Erzurum (2300m); Malatya; Ordu.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous species, associated with the tree layer. Polyphagous, it feeds on plants belonging to several families: Fagaceae, Corylaceae, Salicaceae, Rosaceae and Betulaceae. Sometimes it has been sighted on herbaceous plants.

SOURCES: Ogul, 1970; Medvedev, 1970; Tomov, 1984; Aslan & Özbek, 1997.

Cryptocephalus (Burlinius) lederi Weise, 1889

Cryptocephalus Lederi Weise, 1889: 259.

TERRA TYPICA: Araxes valley (Caucasus).

SYNONYMS: *Cryptocephalus oomorphus*, Jacobson, 1895; *Cryptocephalus ovulum*, Jacobson, 1894 nec Suffrian, 1854: 30.

GENERAL DISTRIBUTION: Transcaucausus, Turkmenistan; Iran; Iraq; Afghanistan; Turkey.

DISTRIBUTION IN TURKEY: Balaban (as *C. oomorphus*).

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous or hygrophilous species. Labiatae *(Mentha)* and Salicaceae *(Salix)* have been reported as possible host plants (Berti & Rapilly, 1973; Rapilly, 1980).

SOURCES: Berti & Rapilly, 1973; Medvedev, 1978; Rapilly, 1980; Lopatin, 1977, 1981, 1982, 1985; Warchalowski, 1999.

TAXONOMIC REMARKS: We could not examine types of Weise's collection, as they seems to be lost (Warchalowski, pers. comm.). On the basis of the original descriptions and comparing specimens of *Cryptocephalus lederi* from Afghanistan, (det. Lopatin) and specimens of *C. oomorphus* also from Afghanistan, (det. Medvedev), and material coming from Iran, we agree with the recent proposal of the synonymy: *C. lederi* Weise, 1889 = *C. oomorphus* Jacobson, 1895 (Warchalowski, 1999).

Cryptocephalus (Burlinius) macellus Suffrian, 1860

Cryptocephalus macellus Suffrian, 1860: 53.

TERRA TYPICA: Greece.

GENERAL DISTRIBUTION: Europe; Syria; Israel; Iran; Egypt; Tunisia; Turkey.

DISTRIBUTION IN TURKEY: Amasya; Antakya; Balikesir; Bilecik; Çanakkale; Erzurum;

Istanbul; Konya; Malatya; Mersin; Samsun.
MATERIAL EXAMINED: Izmir, Kozak, 480m, 19.5.1992, 1 spec. (SZ).

BIOLOGICAL NOTES: Xerophilous species, almost exclusively occurring in the Meditarranean belt. Polyphagous, it probably feeds on Fagaceae (*Quercus*) and Ericaceae.

SOURCES: Weise, 1906b; Sahlberg, 1913; Medvedev, 1970; Medvedev, 1975; Tomov & Gruev, 1975; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Burlinius) ocellatus Drapiez, 1819

Cryptocephalus ocellatus Drapiez, 1819: 201.

TERRA TYPICA: Nuremberg (Germany).

SYNONYMS: *Cryptocephalus geminus* Gyllenhall, 1827*; Cryptocephalus ochropezus* Suffrian, 1853*; Cryptocephalus corsicus* Pic, 1909*; Cryptocephalus hummleri* Pic, 1909.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Iran; Central Asia; Western Siberia; Turkey.

DISTRIBUTION IN TURKEY: Amasya; Ankara; Artvin; Balikesir; Bilecik; Bolu; Bursa; Çanakkale; Erzincan; Erzurum (2300m); Eskisehir; Gümüshane; Istanbul; Kastamonu; Mersin; Ordu; Rize; Samsun; Sivas.
MATERIAL EXAMINED: Ankara, Lalahan, 7.6.1978, 2 specs.; Adiyaman, Nemrut Mts, 1.7.93, 2 specs., (MZ); Bolu, Abant, 1100-1400m, 21.6.1997, 2 specs., (CSAL); Çorum, Koparan, 25.5.1978, 2 specs.; Diyarbakir, Lice, 12.6.1976 2 specs.; Hakkâri, 13.6.1986, 1 spec.; Hakkâri, Çukurca, 14.6.1976, 1 spec.; Kars, Karakurt, Aras river, 1400m, 17.6.1986, 1 spec.; Kütahya, Örencik, 19.5.1971, 1 spec.; Mardin, 3.6.1976 and 14.6.1976, 2 specs..

BIOLOGICAL NOTES: Meso-hygrophilous species, associated with the tree layer (*Salix*, *Betula*, *Corylus*, *Populus*, *Alnus*). The reports on meadow vegetation (*Mentha*, *Melissa*) need confirmation.

SOURCES: Weise, 1884 ; Escherich, 1897; Bodemeyer, 1900; Ogul, 1970; Berti & Rapilly, 1973; Medvedev, 1975; Tomov & Gruev, 1975; Lopatin, 1977; Rapilly, 1980; Tomov, 1984; Warchalowski, 1991; Aslan & Özbek, 1997.

Cryptocephalus (Burlinius) pusillus Fabricius, 1777

Cryptocephalus pusillus Fabricius, 1777: 221.

LOCUS TYPICUS: Hamburg (Germany).

SYNONYMS: *Chrysomela minuta* Herbst, 1783¸ *Cryptocephalus verticalis* Boheman, 1851*; Cryptocephalus raphaelensis* Gautier, 1861.

GENERAL DISTRIBUTION: Europe; Ukraine; Caucasus; Turkey.

DISTRIBUTION IN TURKEY: Turkey (without any explicit locality).
MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Mesophilous or hemihygrophilous species, associated with the tree layer; polyphagous, on Salicaceae, Betulaceae and Corylaceae.

SOURCES: Ogul, 1970; Warchalowski, 1991.

Cryptocephalus (Burlinius) pygmaeus ssp. *vittula* Suffrian, 1848

Cryptocephalus vittula Suffrian, 1848: 63.

TERRA TYPICA: Europe.

TAXONOMIC REMARKS: The status of this taxon is not yet defined, so the true distribution is hard to state precisely. Some authors consider *C. vittula* as a simple synonym of *C. pygmaeus*. Some others treated *C. vittula* as a distinct species. We agree with the opinion of Warchalowski (1991) and consider *C. vittula* as a subspecies of *C. pygmaeus* occurring in the Eastern part of the range.

GENERAL DISTRIBUTION: Italy; Balkans; Syria; Israel; Northern Africa (?); Turkey.

DISTRIBUTION IN TURKEY: Afyon; Denizli; Izmir; Izmit.

MATERIAL EXAMINED: Antalya, Fethiye, 6.6.1973, 3 specs.; Bursa, Cagliyan, 10-14.7.1997, 2 specs., (JB); Izmir, Bornova, 29.5.1979, 2 specs.; Izmir, Kinik Yayla köy, 24.6.1974, 1 spec.; Mersin, Silifke, 5.1967, 1 spec.; Mugla, Marmaris, 31.5.1966, 1 spec., (ZMH).

BIOLOGICAL NOTES: Hemixerophilous species, associated with herbaceous plants. Oligophagous, feeds on various genera of Labiatae.

SOURCES: Marseul, 1875; Sahlberg, 1913; Winkler, 1929; Burlini, 1956; Ogul, 1970; Tomov, 1984; Gruev & Tomov, 1984; Warchalowski, 1991; Lopatin & Chikanutov, 1997; Aslan & Özbek, 1997.

Cryptocephalus (Burlinius) rufipes (Goeze, 1777)

Chrysomela Rufipes Goeze, 1777: 321.

TERRA TYPICA: not recorded.

SYNONYM: *Cryptocephalus gracilis* Fabricius, 1792.

GENERAL DISTRIBUTION: Europe; Northern Africa; Turkey.

DISTRIBUTION IN TURKEY: Istanbul.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Hygrophilous species, associated with the tree layer. Polyphagous, it has been usually found on Salicaceae.

SOURCES: Medvedev, 1970; Warchalowski, 1991.

Cryptocephalus (Burlinius) strigosus Germar, 1824

Cryptocephalus strigosus Germar, 1824: 560.

TERRA TYPICA: Dalmatia.

GENERAL DISTRIBUTION: Southern Europe, Balkans; Turkey.

DISTRIBUTION IN TURKEY: Erzurum.

MATERIAL EXAMINED: none.

BIOLOGICAL NOTES: Oligophagous species, feeding on herbaceous plants (*Mentha, Thymus*).

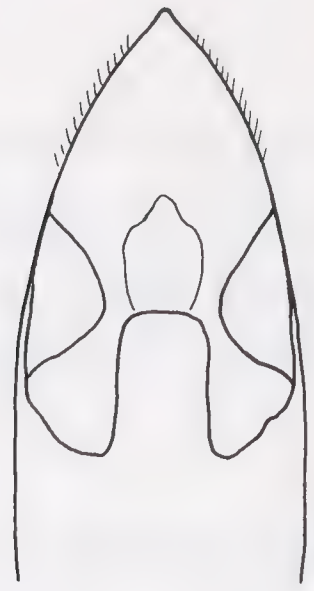
SOURCES: Burlini, 1956; Warchalowski, 1991; Aslan & Özbek, 1997.

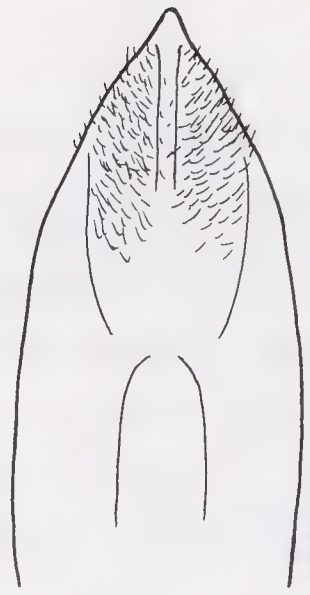
Cryptocephalus (Burlinius) sultani Pic, 1920

Cryptocephalus sultani Pic, 1920: 22.

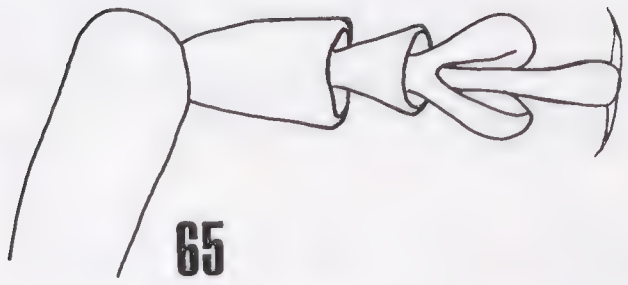
LOCUS TYPICUS: Eskisehir.

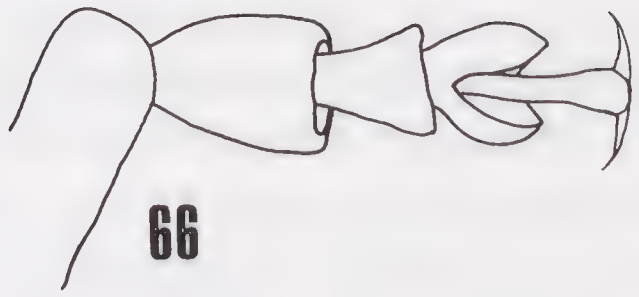
TAXONOMIC REMARKS: Thanks to the kindness of M.me Nicole Berti we examined the


62

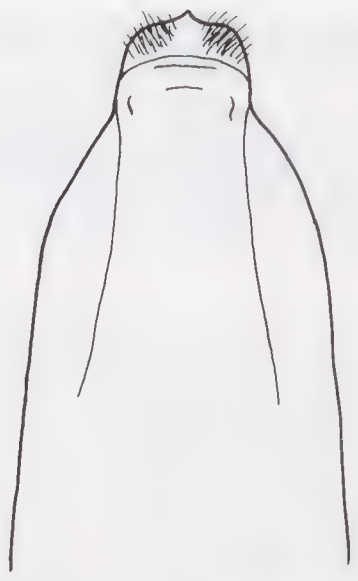

63

64


65


66

67


68

69

Figs 62-64 and 67-69: aedeagus. Figs 65-66: foretarsi, (scale: 0.99 mm). 62-64: *Pachybrachis laticollis* (Suffrian) (Mardin, lectotypus of *P. misellus* (Weise), (scale: 0.66 mm); 65 and 67: *P. mardinensis* (Weise) (Aydinlar, Turkey); 66 and 68-69: *P. limbatus* (Ménétriés) (Amman, Jordan). Figures 67-68 show aedeagus in dorsal view, (scale: 0.76 mm).

syntypes of the species from Pic collection: 1 male (designated as lectotype) with the following data: “type” (handwritten white label) / “Klein - Asien Eski-Chehir v. Bodemeyer” (printed, white label) / “type” (printed, red label). 1 female with the following data: “Type” (handwritten white label) / “Asia minor Sultan Dagh v. Bodemeyer” (printed, white label) / “type” (printed, red label)/ “sultani Pic” (handwritten, white label).

General distribution: Endemic species from Turkey.

Distribution in Turkey: Eskisehir; Konya.

Material examined: Adiyaman, 26.7.1977, 1 female (uncertain identification).

Biological notes: No data were found in the literature.

Cryptocephalus (Burlinius) tschimganensis Weise, 1894

Cryptocephalus tschimganensis, Weise, 1894: 68.

TERRA TYPICA: Chimgan (Tien Shan, Uzbekistan).

GENERAL DISTRIBUTION: Central Asia; Turkey.

DISTRIBUTION IN TURKEY: Baba Dagh; Izmir.
MATERIAL EXAMINED: Karpuzda, 29.7.1977, 1 female (uncertain identification).

BIOLOGICAL NOTES: Feeds on *Glycirrhiza*, according to Lopatin (1977), dubiously on *Salix, Populus* and *Acer* according to Medvedev & Roginskaia (1988).

SOURCES: Weise, 1894a; Sahlberg, 1913; Lopatin, 1977; Medvedev & Roginskaia, 1988.

Cryptocephalus (Burlinius) tshorumae Tomov, 1984

Cryptocephalus (Burlinius) tshorumae Tomov, 1984: 376.

LOCUS TYPICUS: Bogazkale (Çorum, Turkey).

GENERAL DISTRIBUTION: Endemic species of Turkey.

DISTRIBUTION IN TURKEY: reported from type locality only.
MATERIAL EXAMINED: Bolu, 30.7.1981, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature.

Cryptocephalus (Burlinius) variceps Weise, 1884

Cryptocephalus variceps Weise, 1884 : 161.

LOCUS TYPICUS: Istanbul.

SYNONYM: *Cryptocephalus karsantianus* Pic, 1914 **n. syn.**

TAXONOMIC REMARKS: Medvedev & Samoderzhenkov (1989) downgraded the taxon to a subspecies of *C. exiguus*, according to the quite identical shape of aedeagus. On the contrary we prefer to keep the taxa apart at species level until more information about range of distribution becomes available. We examined the type series of *C. variceps* [(4 specimens, labelled "Turcia" and "Merkl" (handwritten, white labels), one of them, a male, designated as lectotype by Lopatin (1989)]. Morphological differences with *C. exiguus* seem to be more definite compared with what Medvedev et Samoderzhenkov had reported in their work. As a matter of fact, *C. variceps* differs in stouter body outline, more transverse pronotum, in lack of the typical lengthened punctation, in lighter coloration of legs, in dorsal process of aedeagus subequal to ventral ones (distinctly shorter in *C. exiguus*).

Besides, we designated the type specimen of *Cryptocephalus karsantianus* Pic. It is a male, labelled as follows: "? Karsanti" (handwritten, white label) / "type" (handwritten, white label) / "type" (printed, red label) / "*karsantianus* Pic" (handwritten, white label) / "*karsantianus* Pic" (handwritten, blue label). In our opinion it is identical to the present species, so we propose the new synonymy: *Cryptocephalus variceps* Weise, 1884 = *Cryptocephalus karsantianus* Pic, 1914.

GENERAL DISTRIBUTION: Balkans; Caucasus; Iran; Turkey.

DISTRIBUTION IN TURKEY: Adana (as *C. karsantianus*); Istanbul; Izmir.

MATERIAL EXAMINED: Adapazari, Hendek, 14.7.1972, 1 spec.; Bursa, Iznik, 27.5.1967, 1 spec.

BIOLOGICAL NOTES: No data were found in the literature.

SOURCES: Weise, 1884; Berti & Rapilly, 1973; Tomov, 1984; Gruev & Tomov, 1984; Aslan & Özbek, 1997.

QUESTIONABLE OR ERRONEOUS RECORDS

Cryptocephalus (Asionus) pavloskii Lopatin, 1956. Oglobin & Medvedev (1956) described *C. imitator* on specimens from Talas, (Kalca) without any further specification. In the Zoological Record (1956: 336) the locality was reported as being situated in Turkey, but in fact it is NW Kirghizistan. Afterwards (Lopatin, 1963) the species was synonymyzed to *C. pavloskii.*

Cryptocephalus (Asionus) reitteri Weise, 1882. It has been reported by Warchalowski (1974,1991) who erroneously interpreted an ambiguous datum of Burlini (1956) (Warchalowski, personal communication).

Cryptocephalus (Lamellosus) laevicollis Gebler, 1830. Older reports from Turkey (Weise, Bodemeyer) preceded the description of the very close *C. angorensis* Pic, 1908. It has also been reported by Tomov & Gruev (1975) from Amasya and Çorum, but afterwards the record was attributed to *C. angorensis* (Tomov, 1979). Therefore the presence of this species in Turkey seems most unlikely.

Cryptocephalus (Cryptocephalus) concolor Suffrian, 1847. It has been reported for the region by several authors (Bodemeyer, 1900; Breit, 1918; Berti & Rapilly, 1973; Warchalowski, 1974; Tomov & Gruev., 1975; Tomov, 1984; Aslan & Özbek, 1997b) but according to Lopatin (1984) the species does not reach the territory under study and the reports must be attributed to *C. duplicatus* Suffrian, 1847.

Cryptocephalus (Cryptocephalus) globicollis Suffrian, 1847. It has been reported by Weise (1884) dubiously from Amasya and afterwards (1901) from Konya. In our opinion these records must be ascribed to the closely related *Cryptocephalus paphlagonius* n. sp.

*Cryptocephalus (Cryptocephalus) violaceu*s Laicharting, 1781. All Turkish male specimens labelled as *C. violaceus* in the examined collection were in fact *C. duplicatus.* Females are pratically indistinguishable from *C. virens* and differ from *C. duplicatus* only in faint chromatic differences. In spite of the indications of some authors (Breit, 1918; Burlini, 1956; Aslan & Özbek, 1997b) the presence of this species in Turkey must be considered uncertain, in our opinion.

Aslan & Özbek (1997; 1998) reported from Turkey the following species as belonging to the Turkish fauna; on the contrary they have never been recorded in the territory under study: *Cryptocephalus corinthius* Pic, 1914*; Cryptocephalus creticus* Suffrian, 1847*; Cryptocephalus inaequalis* Fairmaire, 1902*; Pachybrachis flexuosus,* (Weise, 1882).

Besides, the following taxa are also reported by Aslan & Özbek (1997); they were all described as chromatic varieties of quite variable species, therefore they have to be considered synonyms of the respective nominal forms, in our opinion:

Cryptocephalus bipunctatus var. *thomsoni* Weise, 1882; *Cryptocephalus ilicis* var. *oblitteratipennis* Pic, 1900; *Cryptocephalus ilicis* var. *prinkipensis* Pic, 1908; *Cryptocephalus pygmaeus* var. *lugubris* Demaison, 1904; *Cryptocephalus pygmaeus* var. *orientalis* Weise, 1882; *Cryptocephalus tappesi* var. *disconiger* Pic, 1904.

KEY TO GENERA

1 Scutellum invisible from above; eyes entire; body small, cylindrical, dorsally with short hairs . . . . . *Stylosomus* Suffrian, 1848
- Scutellum large, distinct 2
2 Pronotum narrowly marginate, not closely fitted to base of elytra; elytral base thickened 3
- Pronotum not marginate, closely fitted to base of elytra; elytral base not thickened 4
3 Pronotal surface with distinct pubescence; scutellum flat at apex . . . . *Thelyterotarsus* Weise, 1882 (this genus is not yet recorded in the territory under study, but some species have been reported from Caucasus, Iran, Jordan and Israel, so its presence is possible in northeastern or southern regions)
- Pronotal surface glabrous; scutellum elevated posterad . . . . . *Pachybrachis* Chevrolat, 1837
4 Antenna long, slender, preapical segments at least 1 1/2 times as long as wide . . . . . *Cryptocephalus* Müller, 1764
- Antenna short, preapical segments about as wide as long; body small (length 1.7-2.0 mm) . . . . . *Melixanthus* Suffrian, 1854 (the genus *Melixanthus* is not yet recorded in Turkey, but two species occur in neighbouring territories, so their presence is possible in the area under study. They are:
M. brunnicollis (Suffrian, 1857): abdomen reddish brown, elytra and pronotum ochraceous with darker markings. Egypt, Israel.
M. granularis (Suffrian, 1857) (= *M. jordanicus* Lopatin, 1979): abdomen and upper part entirely yellow. Caucasus, Jordan, Saudi Arabia, Israel).

KEY TO TURKISH SPECIES OF GENUS *STYLOSOMUS*

1 Body reddish-brown to blackish; elytra irregularly punctate; tarsi distinctly shorter than tibiae (not yet recorded in the region) . . . . . subg. *Microstylus* Rey
- Body yellow or ochraceous; elytral punctures arranged in regular rows; tarsi lengthened, slender, as long as tibiae (*Stylosomus* s.str.) 2
2 Body unicolored yellow; elytral intervals with short, erect hairs; length 1.6 - 2.0 mm . . . *flavus*
- Vertex, base of elytra and suture generally darkened; elytral interval with long, closely fitting, slighty elevated hairs 3
3 Pronotum deeply and regularly punctate; interstices on elytra flat, larger than the diameter of punctures; length 1.5 - 2.5 mm . . . . . *tamaricis*
- Punctures on pronotum slightly smaller and sparser; interstices on elytra not larger than the diameter of punctures; length 2.5 mm . . . . . *subelongatus*

KEY TO TURKISH SPECIES OF GENUS *PACHYBRACHIS*

1 Pronotum entirely ochraceus with or without undefined reddish pattern 2
- At least pronotum with well developed black pattern 4
2 Elytral punctation arranged in regular, curved rows, additional punctures only in scutellar area; length 3.0 - 4.0 mm . . . . . .*glycyrrhizae*
- Elytral punctures not arranged in regular rows 3
3 Smaller species; head with well defined black dark pattern; elytral punctures brown at bottom as well as humeral spot; aedeagus with a simple triangular apex; length 3.4 - 3.8 mm . . . . . .*anatolicus*
- Larger species; frons with darker pattern reduced to a reddish median line; dorsal surface totally ohraceous; elytral punctures very deeply impressed; aedeagus tridentate; length 3.0 to 5.0 mm . . . . . .*nigropunctatus*
4 Pronotum with M - shaped black pattern; elytra yellow, only a little black spot on humeri, punctation partly in regular rows, punctures blackish at bottom; length 2.9 - 3.7 mm . .*scripticollis*
- Elytra and pronotum with well marked dark pattern 5
5 Sides of mesosternum yellow or with a yellow spot 6
- Sides of mesosternum completely black 13
6 Length less than 3.2 mm, punctation on pronotum very dense and regular; elytral black pattern consists of a longitudinal stripe extending from base to clivus and three black spots on side (stripe and spots sometimes reduced); aedeagus as in figures 58-60; dorsal pattern as in figure 61 . . . . . .*pentheri*
- Length generally more than 3.2 mm; punctures on pronotum deeper and sparser 7
7 Elytra mostly black, light pattern reduced to little yellow spots in relief; aedeagus as in figures 62-64; length 3.0 - 3.6 mm . . . . . .*laticollis*
- Light pattern on elytra plane and larger 8
8 Elytra yellow with suture, apical and lateral margins black; black pattern on disk forming several longitudinal furrows, particularly on sides, leaving intervals in relief; pronotum yellow with M-shaped black pattern; ventrites black; length 4.0 - 4.3 mm . . . . . .*adaliensis*
- Black pattern on elytra variable, but never forming longitudinal furrows 9
9 Elytra yellow with black humeral spot (sometimes a short irregular stripe near lateral margin and a sign of postscutellar spot black as well); length 3.3 - 4.0 mm . . . . . .*humeralis*
- Black pattern on elytra more developed 10
10 Last abdominal sternite black; pygidium black or sometimes with little yellow spots; femora often with black line on dorsal surface; metatibiae sometimes darkened; length 3.0 - 4.0 mm . . . . . .*hieroglyphicus*
- Pygidium and last abdominal sternite with yellow spots 11
11 Smaller species (length of male less than 3.5 mm.); aedeagus with a short but distinct tooth on apex; length 2.8 - 3.5 mm . . . . . .*instabilis*
- Larger species (length of male more than 3.5 mm) 12
12 Legs entirely yellow; punctures of postscutellar area sparser and partly arranged in subregular rows; length 4.0 - 4.5 mm . . . . . .*albicans*
- Legs partly darkened; punctation on postscutellar area closer and completely confused; length 3.0 - 4.0 mm. . . . . *scriptidorsum*
13 Body smaller; punctures on pronotum dense and more delicate; elytra mostly black with posterior half of suture, last interstice (posterior to humerus), apical and anterior margins and some sparse spots on disk yellow; length 2.4 - 3.4 mm . . . . . .*fimbriolatus* spp. *mendax*
- Body larger, length more than 3.3 mm; punctures on pronotum generally deeper and sparser; posterior half of suture and last interstice at least partly black 14

14 Elytra mostly black, light pattern completely missing or reduced to little yellow spots in relief 15
- Yellow pattern on elytra plane and larger; elytra generally yellow with three outer spots and a longitudinal black band extending in the middle of disk, from base to slope, often partly fused with sutural stripe; black spots and bands often coalescent; in the darkest forms, dorsal surface may be entirely black 21
15 Yellow pattern missing, elytra completely black .....
(generally female specs. of *P. limbatus*, *P. tessellatus*, *P. mardinensis* and *P. laticollis*, there is at present no valid character for a correct identification)
- Yellow pattern present 16
16 Apex of elytra with a yellow fimbria extending anteriorly; pronotum black with yellow lateral and anterior margins, additional light pattern consist of a longitudinal median line and two lateral triangular spots fused with anterior margin, and two curved spots near base; elytra black with numerous yellow spots 17
- Apex of elytra yellow but without fimbria extending anteriorly; pronotum black with lateral and anterior margin yellow, without additional spots 19
17 Apical 1/3 of commissure generally yellow; meso- and metatibia almost completely or completely black; punctures on disk of pronotum sparser and deeper; aedeagus notched terminally; length 3.5 - 4.3 mm .....*tessellatus* ssp. *orientalis*
- Yellow apical margin of elytra not extending anteriorly along commissure; meso- and metatibia yellow or partly darkened; aedeagus pointed terminally 18
18 Body outline slender; smaller species (length of males about 3 mm); punctures on pronotum finer and more regularly distributed; epimera of mesothorax in the examined specs. with a little yellow spot; length 3.0 - 3.6 mm .....*laticollis*
- Body outline stouter, larger species (length of males about 3.5 mm); punctures on pronotum deeper and sparser; epimera of mesothorax completely black; length 3.5 - 4.0 mm .....*picus*
19 Median and hind legs entirely black, with a withish spot on apex of femora 20
- Tibiae, tarsi and base of femora partly yellowish; length 3.0 - 3.6 mm .....*laticollis*
20 In male third tarsal segment not enlarged (figure 65); posthumeral spots on last and second-last interval partly fused together, the outer one more extended posterad; apex of aedeagus (figure 67) trifurcate; length 3.0 - 4.0 mm .....*mardinensis*
- In male third tarsal segment fairly enlarged (figure 66); posthumeral yellow spot on last interstice small, sometimes obliteated, anyway not extending posterad more than the one on the second-last interstice; apex of aedeagus (figures 68-69) pointed and turned upward; length 3.0 - 3.7 mm. .....*limbatus*
21 Lateral interstice of elytra entirely yellow; hind tibiae darkened toward apex 22
- Lateral interstice of elytra partly or completely black; hind tibiae entirely black; apical 1/4 of elytra completely yellow; length 3.4 - 3.6 mm .....*velarum*
22 Apical 1/4 of elytra completely yellow; length 3.0 - 3.5 mm .....*bodemeyeri*
- Only apical 1/6 of elytra completely yellow; length 3.2 - 3.8 mm .....*sinuatus*

KEY TO TURKISH SPECIES OF GENUS *CRYPTOCEPHALUS*

1 Elytra completely or partly regularly punctate 2
- Elytra irregularly punctate 36
2 Dorsal surface not metallic 3
- Dorsal surface entirely or partly metallic 32
3 Length less than 3.5 mm 4

- Length more than 3.5 mm 22
4 Aedeagus (figures 1-3) terminally ended into simple triangular apex; pronotum black, with yellow anterior and lateral border, strongly and closely punctured; elytra yellow with a blackish stripe from humeri to clivus; suture margined with a black band; puncturation strong, regular, but rows are broken in posterolateral part of disc; interstices distinctly micropunctured; length 2.8-3.5 mm .....*curda*
- Apex of aedeagus with two ventral and generally one dorsal median process; rows of punctures completely regular on elytra (= subg. *Burlinius*) 5
5 Pronotum deeply punctured or striate, surface dull or silky 6
- Pronotum impunctate or very finely and sparingly punctate, surface lustrous 8
6 Pronotum with dense long striations, surface appears rugose 7
- Pronotal punctures rounded or slightly lengthened; length 1.7-2.3 mm .....*elegantulus*
7 Pronotum black; elytra black, with a median yellow band from humeri to clivus; length 2.5 - 2.5 mm .....*bilineatus*
- Pronotum and elytra uniformly black or piceous; length 2.0 - 2.5 mm .....*exiguus*
8 Pronotum black or brownish black, at most lateral and anterior margins yellow 9
- Pronotum pale, yellow or reddish 16
9 Elytra yellow with humeral blackish spot sometimes extended in a longitudinal stripe, suture black 10
- Elytra completely or mostly black 11
10 Puncture of pronotum visible only with great magnification; anterior and lateral margins yellow, light pattern gradually shading off to black of disc; supraorbital grooves deeply impressed, and widely separated from internal ocular ridges; length 2.5 - 3.0 mm .....*connexus*
- Pronotum with delicate but easily seen punctures, anterior and lateral margins yellow as above, but bound with black of disc sharper; supraorbital grooves short, scarcely separated from ocular edges; length 2.2 - 2.7 mm . .....*vittula*
11 Elytra black with yellow pattern 12
- Elytra entirely black or piceous 13
12 Elytra black with yellow spot on apex; length 2.2 - 2.8 mm .....*chrysopus*
- Elytra black with a transverse yellow band near base and a lateral yellow stripe in the anterior half, partly extended to epipleura; length 2 - 3 mm. .....*strigosus*
13 Head black with a yellow rounded or elliptic spot upper eye-lobes 14
- Head without such spot 15
14 Spots upper eye-lobes at same level as remainder of frons; antennae robust, preapical segments about 1.5 times as long as wide; dorsal process of aedeagus (figures 4-5) distinctly shorter than lateral ones; length 2.5 - 4.0 mm .....*lederi*
- Spots upper eye-lobes shiny and slightly elevated; antennae slender, subapical segments more than 2 times as long as wide; dorsal process of aedeagus (figures 6-7) as long as lateral ones; length 2.5 - 3.3 mm .....*ocellatus*
15 Frons entirely or almost entirely yellow; clypeus and legs yellow as well; length 2.0 mm .....*variceps*
- Frons blackish; clypeus and genal spaces yellow; femora partly darkened; length 2.2 - 3.0 mm .....*labiatus*
16 Supraorbital grooves deeply impressed and widely separated from internal ocular edge; elytral rows fairly impressed, punctures clearly visible on apical clivus; apex of aedeagus trilobate, dorsal process rounded; length 2.3 - 2.7 mm .....*fulvus*
- Supraorbital grooves short and scarcely separated from ocular edge 17
17 Pronotum longer and more convex; elytra often with indistinct ochraceous spots on humerus

and clivus, sometimes fused together to form a longitudinal band; rows impressed, lateral intervals convex; aedeagus (figures 8-9) without dorsal median process; length 2.1 - 3.2 mm . . . . . *tschimganensis*

- Pronotum more transverse and less convex; apex of aedeagus trilobate; elytral rows weakened on apical clivus 18

18 Dorsal surface yellow; underside black in typical specs. 19

- Pronotum reddish elytra with variable brown to black pattern, in extremely dark form almost whole disc is brown or black except epipleura and anterior part of lateral margins 20

19 Pronotum short; elytral punctation more delicate, intervals flat, suture yellow, sometimes an indistinct ochraceus oblique stripe along each side of elytral disc; dorsal process of aedeagus pointed terminally; length 2.3 - 2.6 mm . . . . . *.macellus*

- Pronotum less transverse; elytral punctation more impressed, intervals convex, suture black; dorsal process of aedeagus rounded terminally; length 2.3 - 2.6 mm . . . . . *.sultani*

20 Elytra black, yellow stripe on lateral margins not extended to posterior half of elytra, its bound with black of disk sharper; apex of elytra generally without yellow markings; length 2.5 - 3 mm. . . . . *.rufipes*

- Elytra brown to black, yellow stripe on lateral margins gradually shading off to black of disk and generally extended to posterior half of elytra; apex of elytra with yellow markings; mesoepimera black 21

21 Pronotum impunctate; dorsal process of aedeagus (figures 10-11) rounded apically; length 2.5 - 3.0 mm . . . . *pusillus*

- Pronotum minutely punctured; dorsal process of aedeagus (figures 12-13) pointed apically; length 2.2 mm . . . . . *.tshorumae*

22 Elytra black with yellow pattern 23

- Elytra yellow or red, with or without dark pattern 27

23 Pronotum black; elytra black with broad yellow spot on apex; length 4.5 - 6.0 mm . . . *.biguttatus*

- Yellow pattern extended to anterior part of elytra 24

24 Base of elytra black; pronotum distinctly punctate; length 3.5 - 4.5 mm . . . . . *.moraei*

- Yellow elytral pattern comprises a basal band; pronotum impunctate 25

25 Yellow bands at base of elytra include entirely the scutellum; rows of punctures deeper, clearly visible on clivus; length 3.5 - 4.5 mm . . . . . *.octacosmus*

- Yellow bands at base of elytra do not reach the scutellum at their median side; rows of punctures obsolete on elytral clivus 26

26 Body outline stout and oval; elytra clearly converging towards apex; rows of punctures very fine; light pattern on elytra ochraceous; length 3.5 - 4.5 mm . . . . . *.crassus*

- Body outline slimmer; elytral sides parallel, elytral light pattern whitish, often reduced or obliterated; length 4.2 - 4.6 mm . . . . . *.anticus*

27 Body entirely yellow; length 3,4-4,5 mm . . . . . *.surdus*

- Dorsal surface with dark pattern 28

28 Pronotum with dark M-shaped pattern; elytra with sinuate, transverse bands; interrow spaces minutely punctate; length 5.5 - 6.0 mm . . . . . *.fulmenifer*

- Elytra without sinuate, transverse pattern 29

29 Pronotum red, with dark spots; length 6.0 - 7.7 mm . . . . . *.gloriosus*

- Pronotum black 30

30 Lateral margins of pronotum entirely visible from above, anterior angles often with some scattered hairs; elytra yellow or reddish with three black spots (1 humeral + 2 on apical clivus); length 5.0 - 6.5 mm . . . . . *.imperialis*

- Lateral margins of pronotum not entirely visible from above, anterior angles bare 31

31 Elytra red, with three black spots (1 humeral + 2 on apical clivus); length 5.0 - 7.0 mm . . . . . *.trimaculatus*
- Elytra red, with variable black pattern, but never 1 + 2 black spots: 1 + 1 or only 1 humeral spot (sometimes elongate toward clivus); paler specs. have elytra completely reddish; length 4.0 - 6.0 mm . . . . . *.bipunctatus*
32 Pronotum black with minute punctation, anterior and lateral margins yellow; elytra metallic blue; rows of elytral punctures weakly impressed, barely visible on apical clivus; legs completely yellow, aedeagus as in figures 14-16; length 3.5 - 4.6 mm . . . . . *.peyroni*
- Not such a combination of characters 33
33 Pronotum with dense punctation, larger and deeper on flanks; lateral margins of pronotum narrow, visible from above only posteriorly; clipeus and frons (at least on apex of eyes) with yellow pattern; length 3.0 - 4.5 mm . . . . . *.janthinus*
- Punctures on sides of pronotum not larger than in central part of disc; lateral margins of pronotum wider, entirely visible from above; only clipeus and genae yellowish 34
34 Pronotal punctures more impressed, punctures near anterior margin as deep as those on disc; dorsal surface entirely metallic in both sexes; length 3.0 - 4.0 mm . . . . . *.parvulus*
- Pronotal punctures shallower, punctures near anterior margin less impressed than those on disc; elytral surface entirely metallic or mostly yellow in female 35
35 Ventral surface of aedeagus (figure 17) with two longitudinal oblique furrows on apex; female with elytra mostly yellow; length 4.2 - 5.0 mm . . . . . *.bicolor*
- Ventral surface of aedeagus (figure 18) without longitudinal oblique furrows; upper part entirely metallic in both sexes; length 4.0 - 5.0 mm . . . . . *.pelleti*
36 Protibiae in male specs. expanded in a triangular tooth on apex; apex of aedeagus strongly widened, obtuse, spoon -shaped, with a median ventral lobe shortly surpassing the apical rim; lateral margins of pronotum slender, not entirely visible from above; elytra red, with two spots near base and a transverse band on clivus black; underside, head and legs black, sometimes protibiae paler: subg. *Lamellosus* (only male specs. identifiable for certain) 37
- Not such a combination of characters 38
37 Triangular tooth on apex of protibiae smaller; lateral margins of apex of aedeagus (figure 19) not or scarcely bent ventrally; length 4.0 - 4.5 mm (uncertain presence in the territory under study) . . . . . *.laevicollis*
- Triangular tooth on apex of protibiae larger; lateral margins of apex of aedeagus (figure 20) clearly bent ventrally; length 4.7 - 5.8 mm . . . . . *.angorensis*
38 4th tarsal segment slimmer, at least one half its length projecting out of lobes of 3rd segment; elytra more or less hairy, in particular on sides and clivus: subg. *Asionus*, pars 39
- 4th tarsal segment stouter and shorter 44
39 Metallic blue; anterior and lateral margins of pronotum yellow in male, elytra with yellow band on anterior half of lateral sides; apex of elytra with yellow spot; legs darkened, apex of femora with pale spot; length 4.0 - 5.0 mm . . . . . *apicalis*
- Dorsally not metallic, yellow or red with dark pattern 40
40 Body stouter (length / width ratio less than 1.8); pronotal punctation coarse and dense; pronotum black or brown with yellow pattern 41
- Body slender, cylindrical (length / width ratio = 1.9 or greater), pronotum yellow with little black spots; length 5.0 mm or more 42
41 Pronotum mostly brownish, with yellow anterior and lateral margins, a yellow curved stripe, concave anterad, near base; elytra mostly yellow; aedeagus as in figures 21-23; length 3.5 - 4 mm . . . . . *.volkovitshi*
- Pronotum black with anterior and lateral margins yellow; elytra red with dark pattern; length 4.0 - 4.3 mm . . . . . *.amasiensis*

42 Pronotum with 8 black spots (in two rows); elytra with 2 spots in posthumeral area and 2 spots on clivus; in the palest specs. the dark spots are mostly reduced; anal sternite in male with a pointed tubercle bordering a shallow depression; length 5.0 - 6.0 mm . . . . . *quatuordecimmaculatus*
- Only 4 spots on pronotum; eytra with 2 spots in posthumeral area and 1 spot on clivus . . . 43
43 Head completely black (sometimes labrum yellowish). Anal sternite in male with a little transverse bifid ridge bordering the anterior margin of a shallow depression; length 5.0 - 5.5 mm . . . . . *.reitteri*
- Head with a little yellow spot under eyes; anal sternite in male with a pointed tubercle; length 6.0 mm . . . . . *.pseudoreitteri*
44 Dorsal surface entirely or partly metallic 45
- Dorsal surface not metallic 59
45 Only pronotum metallic; elytra reddish with dark pattern 46
- Elytra partly or entirely metallic as well 48
46 Only pronotum with long hairs; elytral surface bald; length 4.0 - 5.0 mm . . . . . *ilicis*
- Pronotum and elytra with long hairs 47
47 Punctures of pronotum strongly elongated, its surface appears rugose; elytra yellow with black spots, or almost entirely black in melanistic forms; length 4.0 - 5.0 mm . . . . . *rugicollis*
- Punctures on pronotum rounded; elytra reddish . . . . . *.euchirus* (female)
48 Dorsal surface with long hairs; abdominal sternites partly fused together; first abdominal sternite in male with a longitudinal process reaching anal sternite: subg. *Protophysus* (pars) . . 49
- Dorsal surface bald 51
49 Metatibiae in male specs. without apical enlargement; elytral surface in female mostly reddish; aedeagus and abdomen as in figures 24-27; length 5.5 - 6.2 mm (Iranian species, its presence in Turkey is possible in the easternmost territories) . . . . . *euchirus*
- Metatibiae in male specs. with a leaf - shaped apical enlargement; elytral surface in female mostly metallic blue 50
50 Longitudinal process in 1st abdominal sternite in male not bifurcate on apex (figure 31); in female reddish pattern limited at elytral apex; legs yellowish in female; aedeagus as in figure 28-30. Lenght 5.0 - 6.0 mm . . . . . *.moehringi*
- Longitudinal process in first abdominal sternite of male bifurcate on apex (figure 35); in female reddish pattern often reaches anterior half of elytra; at least femora entirely metallic in both sexes; aedeagus as in figures 32-34; length 5.7 - 6.7 mm . . . . . *.wehnkei*
51 Larger species, length 6.0 mm or more, whole surface, except rare forms, green 52
- Smaller species, length less than 6.0 mm, surface green or blue 54
52 Male specs. with anal depression bounded by a bifid ridge. Pronotum usually stronger and denser punctured, surface between punctures more opaque; length 6.0 - 7.5 mm . . . . . *.sericeus*
- Male specs. without ridges bordering anal depression 53
53 Margins of pronotum straighter and larger, usually completely visible when viewed from above; ligula of aedeagus long and pointed, exceeding fraena of endophallus; length 6.0 - 7.5 mm . . . . . *.aureolus*
- Margins of pronotum more curved and slender, usually visible only near posterior angles when viewed from above; pronotal punctures finer and sparser, surface between punctures lustrous; ligula of aedeagus short, not exceeding fraena of endophallus; first sclerite of endophallus as in figures 39-42. Spermatheca as in figure 46; length 6.0 - 8.2 mm . . . . . *.paphlagonius*
54 Dorsal surface deep blue to blackish, never shiny green; margins of pronotum more slender, impunctate; punctures of disc small and sparse (only male specs. identifiable for certain) 55
- Dorsal surface usually shiny green (rare forms metallic blue); margins of pronotum larger, punctured; disc of pronotum with coarse punctation (only male specs. identifiable for certain) 58

55 Anal sternite in males with a shallow depression never bounded by any relief; surface of pronotum more shiny, sometimes with green tints; apex of aedeagus (figure 51) shortly triangular; ventral surface deeply sunken toward apex; length 4.5 - 5.5 mm ..... *.virens*
- Anal sternite in male with a relief of various shape; apex of aedeagus long and narrow 56
56 Anal sternite with a shallow depression whose anterior margin is bounded by a thin little ridge. Ventral surface of apex of aedeagus (figure 52) almost flat; length 5.0 - 6.0 mm (doubtful presence in Turkey) ..... *.violaceus*
- Anal depression in male specs. deep and bounded by a more prominent relief; ventral surface of apex of aedeagus with two longitudinal rounded carinae, bounding a slender central area; dorsum with violet to blackish tints 57
57 Anal depression with a v - shaped relief anterad; ventral surface of aedeagus (figure 49) splitted from basal foramen by a distinct ridge; length 4.5 - 5.5 mm ..... *.duplicatus*
- Anal depression with a pointed, bent tubercle anterad; ventral surface of aedeagus (figure 50) without posterior distinct ridge; length 4.5 - 5.4 mm (Iranian and Caucasian species, never recorded in Turkey, according to Lopatin) ..... *.concolor*
58 Apex of aedeagus triangular, in lateral view not turned ventrally; anal depression in male deeper; length 4.0 - 5.5 mm ..... *.ruguliventris*
- Apex of aedeagus more elongated, in lateral view distinctly turned ventrally; anal depression in male shallower; length 4.0 - 5.5 mm ..... *.praticola*
59 Upper part covered with long hairs; pronotum black with metallic tints, its surface appears rugose; elytra yellow with dark spots, sometimes coalescent to form longitudinal stripes; in darkest form elytra completely black; length 4.0 - 5.5 mm ..... *.rugicollis*
- Upper part bare 60
60 Elytra black, yellow pattern, if present, only on apex and posthumeral margins 61
- Elytra mostly red or yellow 64
61 Elytra completely black; length 4.0 - 5.0 mm ..... *signatifrons*
- At least anterior part of lateral margins of elytra yellow 62
62 Apex of elytra yellow; head and legs completely black; length 4.5 - 5.0 mm .. *quadriguttatus*
- Apex of elytra black 63
63 Pronotum more convex and less transverse, with anterior and lateral margins yellow; yellow lateral strip not reaching posterior angles; head generally entirely yellow; length 3.5 - 5.0 mm ..... *.flavipes*
- Pronotum less convex and more transverse, anterior and lateral margins yellow as well, but lateral strips in male reaching posterior angles; head black with clipeus, genal spaces and a subtriangular macula on frons yellow; length 3.0 - 4.0 mm ..... *.turcicus*
64 Pronotum ochraceus, dull, deeply and coarsely punctured, generally with two little black flecks on disc; elytra yellow, strongly punctured, with four (2 + 2) or five (2 + 2 + 1) flecks (partly obsolete in palest forms) arranged in oblique lines; ventrites and legs yellow; length 4.5 - 5.5 mm ..... *.octomaculatus*
- Not such a combination of characters 65
65 Lateral margins of pronotum very broad, forming a shallow gutter; elytral margin broad as well, entirely visible from above from humeri to clivus; pronotum black, anterior and lateral margins yellow; a yellow median stripe from anterior rim, sometimes forming an anchor-shaped pattern; elytra red with suture, lateral rims and three spots (2,1) on disc black; spots often more or less coalescent or obsolete 66
- Pronotal and elytral margins slimmer 69
66 Elytral epipleura black, femora black with a whitish spot on apex 67
- Elytral epipleura red, legs black, sometimes fore tibia paler 68

67 Body slender, humeral spot smaller, usually covering only 1/4 postmedian part of humeral tubercle; elytra generally with three spots (2 + 1); aedeagus as in figure 47; length 5.0 - 5.5 mm . . . . . *.sexpunctatus*
- Body stouter; humeral spot larger, usually extended on posterior half of humeral tubercle; elytra generally with 4 spots (2 + 2) sometimes coalescent; aedeagus as in figure 48; length 5.5 - 6.0 mm . . . . . *.octopunctatus*

68 Prototum less transverse (length / width ratio about 0.65); elytral black pattern reduced; external anterior spot sometimes splitted or missing; aedeagus slimmer apically (figure 53); length 6.0 - 6.5 mm . . . . . *.biledjekensis*
- Pronotum more transverse (length / width ratio about 0.58); median yellow fimbria on pronotum often anchor - shaped apically, in particular in female (= *trapezensis* form); black spots on elitra wider; aedeagus widened terminally; length 5.5 - 7.0 mm . . . . . *.cribratus*

69 Slim, cylindrical; elytra red with four black spots (2,2) often coalescent and forming a postbasal and a subapical transverse band, commissure black; aedeagus as in figure 55-57; length 6.0 - 7.0 mm . . . . . *.tappesi*
- Stouter; elytra red with two or three black spots, never coalescent 70

70 Elytra usually with two (1 + 1) spots (sometimes a further spot in the anterior half); commissure black; pronotum black with lateral margins, a median longitudinal stripe and a heart-shaped spot anterior to scutellum yellow; length 5.5 - 6.5 mm . . . . . *.cordiger*
- Elytra with three spots 71

71 Male: pronotum black, lateral margins more slender and curved; protibiae curved, bisinuated on inner side; metafemora with large obtuse denticle on outer rim; in female anterior margin of pronotum is yellow; length 7.0 - 8.0 mm . . . . . *.loebli*
- Male: pronotum black with yellow pattern, lateral margins larger; shape of legs unmodified; in female anterior margin is black. 6.3 - 8 mm . . . . . *.prusias*

ACKNOWLEDGEMENTS

We are greatly indebted with Dr N. Berti (Muséum national d'Histoire naturelle, Paris), Dr K. Schneider (Martin-Luther-Universität, Halle), Dr H. Schönmann (Naturhistorisches Museum, Wien), Dr H. Wendt (Museum für Naturkunde der Humboldt-Universität, Berlin), Dr L. Zerche (Deutsches Entomologisches Institut, Eberswalde) for allowing us to study types under their care. Additionally, we thank Dr I. Löbl (Muséum d'Histoire naturelle, Geneva), Dr H. Silfverberg (Zoological Museum, University of Helsinki), Dr A. Vigna Taglianti (Università "La Sapienza", Rome), Dr J. Bezdek (Brno), Dr D. Erber (Giessen), Dr H. Kippenberg (Herzogenaurach), Dr M. Zuber (Kosmonosy), Mr S. Zoia (Milan) for loaning specimens. We are also grateful to Prof. I. Lopatin and Prof. A. Warchalowski who provided bibliographic data and unpublished informations that significantly improved the manuscript. We express our gratitude to Dr E. G. Riley (Texas A&M University) for the English language revision. Our cordial thanks are also due to Mr M. Pavesi (Museo di Storia Naturale, Milano) and Dr A. Gok (Suleyman Demirel University, Isparta) for the valuable remarks.

REFERENCES

APFELBECK V., 1901 - Bericht über eine entomologische Forschungsreise nach der Türkey und Griechenland im Jahre 1900. Wissenschaftliche Mitteilungen aus Bosnien und der Herzegowina, 8, 3: 145-167.

ASLAN I. & ÖZBEK H., 1997a - New records of the subfamilies Cassidinae and Cryptocephalinae

(Coleoptera, Chrysomelidae) for the Turkish fauna. Zoology in the Middle East, 14: 87-91.

ASLAN I. & ÖZBEK H. 1997b - The Checklist of the subfamily Cryptocephalinae (Coleoptera, Chrysomelidae) in Turkey. Atatürk Üniversitesi, Ziraat Fakültesi Dergisi, Erzurum, 28, 2: 235-255.

ASLAN I. & ÖZBEK H., 1998 - New records of the subfamily Cryptocephalinae (Coleoptera, Chrysomelidae) for the Turkish fauna. Zoology in the Middle East, 16: 81-84.

BEDEL L., 1889-1901 - Faune des Coléoptères du bassin de la Seine. V. Phytophaga. Annales de la Societé Entomologique de France (hors série), 1-423.

BODEMEYER B., 1900 - Quer durch Kleinasien in der Bulghar - Dagh. Eine wissenschaftliche Studienreise. Unter Mitarbeit von G. Ganglbauer, Karl Josef Daniel, J. Weise u. a. Emmendingen, 1-169.

BERTI N. & RAPILLY M., 1973 - Contribution a la faune de l'Iran. Voiages de MM. R. Naviaex et M. Rapilly (*Col. Crysomelidae*). Annales de la Societé Entomologique de France (N. S.), 9, 4: 861-894.

BERTI N. & RAPILLY M., 1979 - Contribution a la faune de l'Iran. 4. Cryptocephalinae. Nouvelle Revue d' Entomologie, IX, 3: 239-269.

BREIT J., 1918 - Beitrag zur Kenntnis der Arten des Genus *Cryptocephalus* Geoffr. Wiener Entomologische Zeitung, 37, 1-3: 35-52.

BURLINI M., 1956 - Revisione dei *Cryptocephalus* Italiani e della maggior parte delle specie di Europa (Col. Chrysomelidae). Memorie della Società Entomologica Italiana, 34 (1955): 5-287.

BURLINI M., 1965 - II Contributo alla conoscenza dei Cryptocephalini paleartici. *Cryptocephalus españoli,* n. sp., della Penisola Iberica. (Coleoptera Chrysomelidae). Bollettino della Società Entomologica Italiana, 95: 17-19.

BURLINI M., 1968 - Revisione delle specie italiane e della maggior parte delle specie europee del genere *Pachybrachis* Chevr. (Coleoptera Chrysomelidae). XXII Contributo alla conoscenza dei Cryptocephalini. Memorie della Società Entomologica Italiana, 47: 11-116.

BURLINI M., 1969 - *Cryptocephalus fulvus* subsp. *schatzmayri* nova. Contributo alla conoscenza dei Cryptocephalini. Bollettino della Società Entomologica Italiana, 99-101, 5-6: 114-115.

CLAVAREAU, H. 1913 - Chrysomelidae I. In: Junk, W., Schekling, S., 1913. Coleopterorum Catalogus, Berlin, 24, pars 53, 278 pp.

DRAPIEZ A., 1819 - Description de huit espèces d'insectes nouveaux. Annales générales des Sciences physiques, 197-204.

DUHALDEBORDE F., 1994 - *Cryptocephalus octacosmus* Bedel: régime alimentaire et parasitologie (Coleoptera, Chrysomelidae). Bulletin de la Société Entomologique de France, 99, 5: 447-454.

ESCHERICH K., 1897 - Zoologische Ergebnisse einer von Dr. K. Escherich und Dr. L. Kathariner nach Central-Kleinasien unternommenen Reise. IV Teil. Coleopteren. Entomologische Zeitung, 58, 1: 3-69.

ESCHSCHOLTZ J.F., 1818 - Decades tres Eleutheratorum novorum. Memoires de l'Academie Imperiale de Sciences de St.-Petersbourg, 6: 451-484.

FALDERMANN F., 1837 - Fauna Entomologica Trans-caucasica. II. Nouvelles Memoires de la Societé des Naturalistes de Moscou, 5: 1-538.

FRANZ H., 1949 - Zur Kenntnis der Rassenbildung bei einigen Arten der Gattung *Cryptocephalus* (Coleopte., Chrysom.). Portugaliae Acta Biologica (B), vol. "Julio Henriques", 165-195.

GANGLBAUER K.L., 1905 - Coleoptera. *in* Penther, A.- & Zederbauer, E. Naturwissenschaftliche Reise in Erdschias-Dag. Annalen des k. k. Nasturhistorischen Hofmuseums, 20: 99-310.

GEBLER F., 1830 - Bemerkungen über die Insekten Sibiriens, vorzüglich des Altai. *in*: Ledebour, C.F. 1829. Reise durch das Altai-Gebirge und die soongorische Kirgisen-Steppe. II Theil. Berlin: 1-228.

GERMAR E. F., 1824 - Insectorum species novae aut minus cognitae, descriptionibus illustratae, vol. I, Halae,: 1-624.

GOEZE J.A.E., 1777 - Entomologische Beiträge zu des Ritter Linné zwölften Ausgabe des Natursystems. Vol. I, Leipzig, 1-736.

GRESSITT J.L. & KIMOTO S. 1961 - The Chrysomelidae (Coleoptera) of China and Korea, I, Pacific Insect Monography 1A, 299 pp.

GRUEV B. & TOMOV V. 1975 - Bemerkungen über einige Blattkäfer, die Dr Warchalowski 1974 für Bulgarien mitgeteilt hat (Coleoptera, Chrysomelidae). Univ. de Plovdiv "Païssi Hilendarsi", Travaux Scientifiques, 13, 4: 153-169.

GRUEV B. & TOMOV V. 1979 - Zur Kenntnis einiger in der Türkei, Jugoslawien und Griechenland vorkommender Arten der Familie Chrysomelidae (Coleoptera) aus der Zoologischen Staatssammlung München. Spixiana, 2,(3): 259-267.

GRUEV B. & TOMOV V., 1984 - Coleoptera, Chysomelidae, Part I. Fauna Bulgarica, 13, Sofia: 1-220.

HERRICH-SCHÄFFER G.A.W., 1829-1844 - Die Fortsetzung von Panzer Faunae Insectorum Germaniae initia. Regensburg, 111-190.

JACOBSON G., 1894 - Chrysomelidae palaearcticae novae ac parum cognitae. Horae Societatis Entomologicae Rossicae, 28: 269-278.

JACOBSON G., 1895 - Chrysomelidae palaearcticae novae ac parum cognitae. Horae Societatis Entomologicae Rossicae, 29: 529-558.

JACOBSON G., 1897 - Duo Chrysomelidae novi transcaucasici. Annales du Muséum de Saint Pétersbourg, 2: 215-217.

JACOBSON G., 1898 - Chrysomelidae palaearcticae novae ac parum cognitae. Annales du Muséum de Saint Pétersbourg, 3: 193.

JOLIVET P., 1988 - Foods Habits and Food Selection of Chrysomelidae, Bionomic and Evolutionary Perspectives. 1-24. *In* P. Jolivet, E. Petitpierre and T.H. Hsiao (Eds.), Biology of Chrysomelidae. Kluwer Acad. Publ., Dordrecht. 1-615.

KIPPENBERG H., 1974 - *Pachybrachis seidenstuekeri,* eine neue Art aus Kleinasien. Entomologische Blätter für Biologie und Systematic der Käefer, 70, 1: 47-50.

LAICHARTING J. N., 1781 - Verzeichniss und Beschreibung der Tyroler-Insecten. I. Theil: Käferartige Insecten. Zürich, 1-248.

LOPATIN I.K., 1956 - O novykh i maloizvestnykh vidakh zhukov-listoedov (Coleoptera, Chrysomelidae) SSSR i sopredel'nykh stran. Izvestiya otdeleniya estestvennyh nauk AN TadzhSSR, 16: 158-159.

LOPATIN I.K., 1963 - Materialy k faune listoedov (Coleoptera, Chrysomelidae) Srednei Azii. IV. Trudy Instituta Zoologii i Parazitologii AN TadzhSSR, 4: 116-123.

LOPATIN I.K., 1965 - K sistematike roda *Cryptocepalus* Geoffr. (Coleoptera, Chrysomelidae). Acta Entomologica Bohemoslovaca, 62,6: 451-457.

LOPATIN I.K., 1976 - Novye i maloizvestnye zhuki-listoedy (Coleoptera , Crysomelidae) fauny SSSR [New and little known leaf beetles (Coleoptera, Crysomelidae] of the USSR. Éntomologicheskoe Obozrêníe, 55, 1: 105-116.

LOPATIN I.K., 1977 - Zhuki-Listoedy (Chrysomelidae) Srednei Azii i Kazakhstana. Nauka Publishers, Leningrad: 1-416.

LOPATIN I.K., 1981 - Ergebnisse der Tschechoslowakish-Iranischen Entomologischen Expeditionen nach dem Iran (1970). Acta Entomologica Musei Nationalis Pragae, 40: 372-376.

LOPATIN I.K., 1984 - Zhuki-listoedy Irana (Coleoptera, Chrysomelidae). Resultaty Czekoslovazko-Iranskih ekspedizii, 1973-1977 rr.III. [Leaf -beetles (Coleoptera, Chrysomelidae) of Iran. Results of the Czechoslovak-Iranian expeditions of the 1973-77. III]. Éntomologicheskoe Obozrêníe, 63, 1: 79-93.

LOPATIN I.K., 1985 - Zhuki-listoedy Irana (Coleoptera, Chrysomelidae). Resultaty Czekoslovazko-Iranskih ekspedizii, 1973-1977 rr.IV. [Leaf -beetles (Coleoptera, Chrysomelidae) of Iran. Results

of the Czechoslovak-Iranian expeditions of the 1973-77. IV]. Éntomologicheskoe Obozrênîe, 64, 4: 760-772.

LOPATIN I.K., 1991 - Descr. of New Species of the Genus Pachybrachis of the Palearctic Fauna, with Synonymic Notes (in Russian). Vestnik Zoologii, 2: 23-27.

LOPATIN I.K. & CHIKATUNOV V., 1997 - The Cryptocephalinae (Coleoptera: Chrysomelidae) of Israel, Jordan and the Sinai part of Egypt. Israel Journal of Entomology, 31: 97-119.

MARSEUL S.A., 1868 - Descriptions des espèces nouvelles. Abeille, 5: 171-218.

MARSEUL S. A., 1875 - Monographie des Cryptocéphales de l'Ancien-Monde. Abeille, 13 (1874): 1-326.

MEDVEDEV, L.N., 1970 - A list of Chrysomelidae collected by Dr W. Wittmer in Turkey (Coleoptera). Revue Suisse de Zoologie, 77, 2: 309-319.

MEDVEDEV L.N., 1971 - Neue und wenig bekannte palaearktische Arten der gattung *Cryptocephalus* Geoffr. (Coleoptera Chrysomelidae). Deutsche Entomologische Zeitschrift, N. F. 18, 1-3: 129-132.

MEDVEDEV L.N., 1975 - Chrysomelidae collected by Dr W. Wittmer in Turkey and Iran. Mitteilungen der Entomologischen Gesellschaft., 25: 12-19.

MEDVEDEV L.N., 1983 - Chrysomelidae from Iran. Senckenbergiana Biologica, Frankfurt am Main, 64, 1-3:133-140.

MEDVEDEV L.N. & Roginskaia E. J., 1988 - Katalog Kormovich rastenij listoedov SSSR. Akademia Nauk SSR. Institut Morfolgii. i Ekologii,1-193.

MEDVEDEV L.N. & SAMODERZHENKOV E., 1989 - A study of Weise's types of Chrysomelidae (Coleoptera). Entomologica Basiliensia, 13: 403-409.

MÉNÉTRIÉS E., 1836 - Insects nouveaux de la Turquie. Bulletin Scientifique publié par l' Académie Impériale des Sciences de Saint Pétersbourg, 1: 149-151.

MOHR K.-H., 1977 - Beiträge zur Insektenfauna der DDR: Coleoptera - Chrysomelidae: Cryptocephalinae. Beiträge zur Entomologie, 27, 2: 197-231.

MOHR K.-H., 1977 - Verzeichnis der von Herrn W. Heinz Muche im Kaukasus und in Mittelasien gesammelten Chrysomeliden (Coleoptera, Phytophaga). Faunistische Abhandlungen, 27, 6: 307-311.

MÜLLER O.F., 1776 - Zoologiae danicae prodromus, seu animalium Daniae et Norvegiae indigenarum characteres, nomina, et synonyma imprimis popularium. Havniae, 1-274.

MULSANT E. & WACHANRU A., 1853 - Description d'un Coleoptére nouveau. Memoirs de l'Academie imperiale de Sciences, Belles-lettres et Arts (nouvelle serie), Classe des Sciences, Paris, 3: 159-160.

MULSANT E. & REY C., 1859 - Description de deux Cryptocéphalides nouveaux ou peu connus. Opuscola Entomologica, 9: 45-51.

OGLOBLIN D.A. & MEDVEDEV L.N., 1956 - Novye formy zhukov-listoedov (Coleoptera, Chrysomelidae) palearkticheskoi fauny. Éntomologicheskoe Obozrênîe, 35, 4: 895-898.

OGUL R.A., 1970 - An ecological and faunistic review of leaf beetles (Coleoptera, Chrysomelidae) from the steppe zone of the left bank of the Dnieper (Ukraine). Éntomologicheskoe Obozrênîe, 49 (4): 791-799.

OLIVIER A. G., 1789-1808 - Entomologie ou histoire naturelle des insectes avec leurs caractères génériques et spécifiques, leur description, leur synonymie et leur figure enluminée. Paris, 4 voll.

OLIVIER A. G., 1791 - Encyclopedie methodique ou par ordre de matiere, par une societe de gens de lettre. Histoire naturelle. Paris, vol. 6, partie 2: 599-626.

PIC M., 1898 - Coléoptères d'Anatolie et de Syrie, *Cryptocephalus delagrangei* sp. n. Revue Scientifique du Bourbonnais, 11: 93.

PIC M., 1900 - Notes et diagnoses. l'Echange, 16, 188: 61-63.

PIC M., 1904 - Diagnoses de divers Coléoptères d'Europe et Turquie d'Asie. l'Echange, 20, 236: 57-58.
PIC M., 1908 - Observations, renseignements divers et diagnoses sur le genre *Cryptocephalus* Geof. l'Echange, 24, 278: 12-16.
PIC M., 1913 - Notes diverses, descriptions et diagnoses. l'Echange, 29, 347: 177-180.
PIC M., 1914 - Notes diverses, descriptions et diagnoses. l'Echange, 30, 350: 10-13.
PIC M., 1920 - Notes diverses, descriptions et diagnoses. l'Echange, 36, 398: 21-22.
RAPILLY M., 1979 - Notes sur quelques Cryptocéphales méconnus ou noveaux pur la faune de France. L' Entomologiste, 35, 1,: 8-15.
RAPILLY M., 1980 - Contribution a la Faune de l'Iran. Coléoptères Chrysomelidae Cryptocephalinae. Revue Française d'Entomologie, 2, 2: 75-85.
RICHTER C.F.W., 1820 - Supplementa Faunae Insectorum Europae, I, Vratislaviae, 1-12.
REITTER E., 1889 - Neue Coleopteren aus Europa, den angränzenden Ländern und Sibirien, mit bemerkungen über bekannte Arten. Deutsche Entomologische Zeitschrift, 33, 8: 369-376.
ROSSI P., 1790 - Fauna Etrusca, sistens insecta quae in provinciis Florentina et Pisana praesertim collegit. Liburni, 2 voll.
ROUBAL J., 1916 - Dalöi novinky ceskych brouku. Casopis Cesckoslovenské Spolecnosti Entomologicke, 13, 3-4: 86-89.
SAHLBERG J., 1913 - Coleoptera mediterranea orientalia, quae in Aegypto, Palaestina, Syria, Caramania atque in Anatolia occidentali anno 1904 collegerunt John Sahlberg et Unio Saalas. Öfversigt af Finska Vetenskaps - Societetens Förhandlingar, 55, 19: 1-28.
SASSI D., 1995 - *Cryptocephalus etruscus* Suffrian dell'Italia peninsulare, specie vicina a *Cryptocephalus ilicis* Olivier (Coleoptera Chrysomelidae Cryptocephalinae). Giornale Italiano di Entomologia, 7: 187-193.
SASSI D., 1997 - *Cryptocephalus (Homalopus) loebli* n. sp. from Turkey (Coleoptera Chrysomelidae Cryptocephalinae). Revue Suisse de Zoologie, 104, 1: 57-70.
SCHNEIDER D.H., 1792 - Verzeichniss und Beschreibung der in der Sammlung des Herausgebers befindlichen zur Gattung *Cryptocephalus* FABR. gehörigen europäischen Käfer, Sägerkäfer und Fallkäfer. Neuestes Magazin für die Liebhaber der Entomologie, 2: 186-220, 384.
SCOPOLI G. A., 1763 - Entomologia Carniolica, 1-418.
SCHRANK F., 1789 - Entomologische Beobachtungen (Coleoptera). Naturforscher, 24: 60-90.
SUFFRIAN E., 1847 - Revision der Europäischen Arten der Gattung *Cryptocephalus*. Linnaea entomologica, 2: 1-194.
SUFFRIAN E., 1848 -. Revision der Europäischen Arten der Gattung *Cryptocephalus*. Linnaea entomologica, 3: 1-152.
SUFFRIAN E., 1853 - Berichtiges Verzeichniss der Europäischen Cryptocephalen. Linnaea entomologica, 8: 88-153.
SUFFRIAN E., 1860 - Berichtiges Verzeichniss der bis jetz bekannt gewordenen asiatischen Cryptocephalen. Linnaea entomologica, 14: 1-72.
TAPPES G., 1871 - Cyptocephalides d'Europe et des pays limitrophes. Annales de la Société Entomologique de France, ser. 5, vol. 1: 253-270.
TZANAKAKIS M.F., SELMAN B.J. & THOMSON R.T., 1963 - Leaf feeding Coleoptera of Greece. I. Chrysomeloidea and Curculionoidea collected in the years 1961 and 1962. Bulletin et Annales de la Société Royale Belge d'Entomologie, 99,28: 417-425.
TOMOV V., 1978 - Über die Nomenklatur zweier *Cryptocephalus* - Arten (Coleoptera, Chrysomelidae). Acta Zoologica Bulgarica, 11: 60-64.
TOMOV V., 1979 - *Lamellosus* subg. n., eine neue Untergattung der Gattung *Cryptocephalus* GEOFFR. (Coleoptera, Chrysomelidae). Reichembachia, 17, 6: 43-47.
TOMOV V., 1984 - Cryptocephalinae and Galerucinae from Turkey (Coleoptera, Chrysomelidae).

Fragmenta Entomologica, 17, 2: 373-378.
TOMOV V. & GRUEV, B. 1975 - Chrysomelidae (Coleoptera) collected by K.M.Guichard in Turkey, Greece and Yugoslavia. Travaux scientifiques, Université de Plovdiv, 13, 4: 133-151.
WARCHALOWSKI A., 1974 - Übersicht der Blattkäfer Bulgariens (Col. Chrysomelidae). Polskie Pismo Entomologiczne, 44, 3: 473-542.
WARCHALOWSKI A., 1991 - Chrysomelidae Stonkowate (Insecta: Coleoptera), Part II. Fauna Polski, 13, Warszawa: 1-347.
WARCHALOWSKI A., 1998 - Über einige kleinasiatische Arten der Gattung *Pachybrachis* Chevrolat, 1837 (Coleoptera, Chrysomelidae, Cryptocephalinae). Annales Zoologici, 48, 1-2: 85-90.
WARCHALOWSKI A., 1999 - Übersicht der westpäaläarktischen Arten der Untergattung *Burlinius* Lopatin, 1965 (Coleoptera: Chrysomelidae: Cryptocephalus). Genus, 10 (4): 529-627.
WEISE J., 1881-1882 - Chrysomelidae. *In*: Naturgeschichte der Insekten Deutschlands. Erste Abtheilung, 6 Band. Berlin., 140-245.
WEISE J., 1884a - Beitrag zur Chrysomeliden-Fauna von Amasia. Deutsche Entomologische Zeitschrift, 28: 157-160.
WEISE J., 1884b - Einige neue Chrysomeliden und Coccinelliden. Deutsche Entomologische Zeitschrift, 28: 161-166.
WEISE J., 1889a - Neuen Chrysomeliden aus Circassien. Wiener Entomologische Zeitung, 8, 1: 1-4.
WEISE J., 1889b - VI. Griechische Chrysomelidae und Coccinellidae. Deutsche Entomologische Zeitschrift, 1: 58-65.
WEISE J., 1894a - *Cryptocephalus tschimganensis.* In Beitrag zur Coleopteren-Fauna von Transcaspien und Turkestan, edited by F. Hauser, Deutsche Entomologische Zeitschrift, 68.
WEISE J., 1894b - Chrysomeliden aus Amasia. Deutsche Entomologische Zeitschrift, 1: 91-92.
WEISE J., 1897 - Neue Chrysomeliden aus Angora. *in* Escherich, K. 1897. Zoologische Ergebnisse einer von Dr. K. Escherich und Dr. L. Katharíner nach Central-Kleinasien unternommenen Reise. IV Teil. Coleopteren. Entomologische Zeitung, 58, 1: 3-69.
WEISE J., 1898 - Ueber neue und bekannte Chrysomelidae. Archiv für Naturgeschichte, 64: 177-224.
WEISE J., 1900a - Neue Coleopteren aus Kleinasien. Deutsche Entomologische Zeitschrift, 1: 132-141.
WEISE J., 1900b - Beschreibungen von Chrysomeliden und synonymische Bemerkungen. Archiv für Naturgeschichte, 1, 2: 267-294.
WEISE J., 1901 - Nachtrag zum kleinasiatischer Coleopteren von Hrn E. v. Bodemeyer, Freiburg i. Br. 1900. Deutsche Entomologische Zeitschrift, 2: 203-204.
WEISE J., 1906a - *Pachybrachis bodemeyeri.* Deutsche Entomologische Zeitschrift, 2: 472.
WEISE J., 1906b - *In*: BODEMEYER, E. v. 1906. Beiträge zur Käferfauna von Klein-Asien. Deutsche Entomologische Zeitschrift, 2: 417-434.
WINKLER A., 1929 - Catalogus Coleopterorum regionis palaearcticae. Cryptocephalinae. Wien, 1249-1265.

Authors addresses:
D. Sassi, via san Rocco 17, I-22030 Castelmarte CO, Italy. E-mail: d.sassi@pn.itnet.it
S. Kismali, University of Ege, Faculty of Agriculture, Department of Plant Protection, Bornova, 35100 Izmir, Turkey. E-mail: kismali@ziraat.ege.edu.tr

Mem. Soc. entom. ital., 78 (1): 131-166. *30 aprile 2000*

Roberto CALDARA

Revisione dei *Pachytychius* delle Regioni Afrotropicale e Orientale (Coleoptera Curculionidae)

Riassunto - Viene effettuata la revisione delle specie afrotropicali e orientali del genere *Pachytychius* Jekel, 1861; si tratta di 15 specie, sette delle quali risultano nuove per la scienza: *P. aethiopicus* (Etiopia), *P. beardae* (Zambia), *P. cognatus* (Africa nord-orientale, penisola arabica), *P. lyali* (Zambia), *P. oberprieleri* (Sud Africa), *P. striatellus* (Kenya) e *P. tuberculatus* (Mozambico, Sud Africa). Sono proposte le seguenti nuove sinonimie: *P. congoanus* Hustache, 1923 = *P. elongatus* (Gyllenhal, [1835]); *P. setosus* ssp. *transmutatus* Voss, 1962 = *P. erythreensis* Hustache, 1932. In base a numerosi caratteri morfologici, risulta verosimile che le specie prese in esame appartengano a tre gruppi strettamente correlati fra loro filogeneticamente: il gruppo di *P. aridicola* (Wollaston) (comprendente specie delle regioni paleartica meridionale e afrotropicale), il gruppo di *P. haematocephalus* (Gyllenhal) (comprendente specie paleartiche, afrotropicali e indiane) e il gruppo di *P. albosparsus* (Fåhraeus)(comprendente solo due specie dell'Africa meridionale).

Abstract - *Revision of Afrotropical and Oriental species of* Pachytychius *Jekel (Coleoptera Curculionidae)*

The Afrotropical and Oriental species of the genus *Pachytychius* Jekel, 1861 are treated systematically; 15 species are recognized, seven of them are new: *P. aethiopicus* (Ethiopia), *P. beardae* (Zambia), *P. cognatus* (North-eastern Africa, Arabian peninsula), *P. lyali* (Zambia), *P. oberprieleri* (South Africa), *P. striatellus* (Kenya), and *P. tuberculatus* (Mozambico, South Africa). The following new synonymies are proposed: *P. congoanus* Hustache, 1923 = *P. elongatus* (Gyllenhal, [1835]); *P. setosus* ssp. *transmutatus* Voss, 1962 = *P. erythreensis* Hustache, 1932. Three phylogenetically closely related groups are recognized: the *P. aridicola* group (including southern Palaearctic and Afrotropical species), the *P. haematocephalus* group (including Palaearctic, Afrotropical and Indian species), and the *P. albosparsus* group (including only two southern African species).
A key to the species also in English is provided.

Key words: Coleoptera, Curculionidae, Curculioninae, *Pachytychius*, Afrotropical Region, Oriental Region, taxonomical revision, new species.

INTRODUZIONE

Il genere *Pachytychius* Jekel, 1861 è largamente distribuito, con circa una quarantina di specie, nella Regione Paleartica, dalla penisola iberica all'Afghanistan (non si hanno dati sulla sua presenza in Cina e in Giappone). Esso è presente anche nell'Africa subsahariana e in India come testimoniato da poche descrizioni, per la precisione sette per la prima Regione e tre per la seconda.

Mentre le specie della Regione Paleartica sono state sottoposte recentemente a revisione (Caldara, 1978), alla quale sono seguite piccole aggiunte (Caldara, 1984, 1988), quelle delle altre Regioni non sono mai state prese in considerazione dopo la loro più o meno accurata descrizione.

In questi ultimi anni ho svolto approfondite ricerche nei principali Musei europei allo

scopo di rintracciare i tipi e di selezionare fra la miscellanea il maggior numero di esemplari del genere *Pachytychius* raccolti nelle Regioni extra-paleartiche. A questi sono da aggiungere altri esemplari ricevuti in studio da numerosi Colleghi. Sono ora in grado di completare la revisione di questo genere a livello mondiale.

MATERIALE E METODI

Per la presente revisione ho esaminato materiale delle serie tipiche di tutte le specie precedentemente descritte delle Regioni Afrotropicale e Orientale.

Come per le specie paleartiche (Caldara, 1978), ho riportato la descrizione di ogni taxon, effettuata su un esemplare rappresentante nei limiti del possibile la forma più comune nell'ambito della variabilità, omettendo quelle caratteristiche comuni a tutto il genere. Inoltre, per mezzo di un micrometro oculare, ho effettuato le seguenti misurazioni, espresse in valori assoluti o come rapporti: lunghezza totale in mm dall'apice del pronoto all'apice delle elitre lungo la linea mediana; lunghezza del rostro (Rlu) dal bordo anteriore dell'occhio all'apice con esclusione delle mandibole; lunghezza del pronoto (Plu) dalla base all'apice lungo la linea mediana e sua larghezza (Pla) al punto più largo; lunghezza delle elitre (Elu) dalla base all'apice lungo la linea mediana, loro larghezza (Ela) al punto più largo.

ACRONIMI

ARCF. Collezione privata Alexander Riedel, Friedberg, Germania.
BMNH. Department of Entomology, The Natural History Museum, London, Inghilterra (C. Lyal, J. Beard).
CWOB. Collezione privata Charles W. O'Brien, Entomology-Biological Control, Florida A. & M. University, Tallahassee, USA.
DBAU. Dipartimento di Biologia Animale e dell'Uomo, Università degli Studi di Roma "La Sapienza", Roma, Italia (E. Colonnelli).
DEIE. Deutsches Entomologisches Institut, Eberswalde, Germania (L. Behne).
ISNB. Institut Royal des Sciences Naturelles, Bruxelles, Belgio (P. Dessart).
HNHM. Hungarian Natural History Museum, Budapest, Ungheria (O. Merkl).
MACT. Musee Royal de l'Afrique Centrale, Tervuren, Belgio (H. M. André).
MHNG. Muséum d'Histoire Naturelle, Genève, Svizzera (C. Besuchet, J. Löbl).
MNHB. Museum für Naturkunde der Humboldt-Universität, Berlin, Germania (F. Hieke).
MNHP. Muséum National d'Histoire Naturelle, Paris, Francia (H. Perrin).
MSNM. Museo Civico di Storia Naturale, Milano, Italia (C. Leonardi, C. Pesarini).
NHMB. Naturhistorisches Museum, Basel, Svizzera (M. Brancucci).
NHRS. Naturhistoriska Riksmuseet, Stockholm, Svezia (B. Viklund).
RCMC. Collezione privata Roberto Caldara, Milano, Italia.
SAMC. South African Museum, Cape Town, Sud Africa (V. Whitehead).
SANC. South African National Collections, Pretoria, Sud Africa (R. Oberprieler).
USNM. National Museum of Natural History, Washington, USA (J. Pakaluk).
ZMKB. Zoologische Forschunginstitut und Museum A. König, Bonn, Germania (M. Schmitt).

Pachytychius Jekel

Pachytychius Jekel, 1861: 270 (specie tipo: *Tychius sparsutus* (Olivier, 1807), per designazione originale). Tournier, 1874: 452; 1874a: 86. González, 1968: 107. Caldara, 1978: 133.
Styphlotychius Jekel, 1861: 271 (specie tipo: *Tychius scabricollis* Rosenhauer, 1856, per designazione originale). Tournier, 1874: 456; 1874a: 87. Caldara, 1978: 133.
Barytychius Jekel, 1861: 272 (specie tipo: *Tychius hordei* Brullè, 1832, per designazione originale). Tournier, 1874: 460; 1874a: 69, 90. Caldara, 1978: 133.
Rabdotorhinus Desbrochers, 1894: 82 (specie tipo: *Rabdotorhinus hircus* Desbrochers, 1894, per monotipia). Caldara, 1978: 133.

DESCRIZIONE DEL GENERE. Tegumenti da neri a rossastri, ricoperti da squame variabili per forma e numero. Rostro subcilindrico più o meno arcuato, a scrobe che nascono oltre la metà e si dirigono in basso obliquamente all'asse del rostro, visibili di lato solo nella parte anteriore. Antenne rossastre; apice dello scapo, in posizione di riposo, raggiungente il margine anteriore dell'occhio; funicolo di 7 segmenti, il primo allungato, il secondo sempre più lungo che largo, ma più corto e più esile del primo, gli altri via via piu corti fino a distintamente trasversi. Occhi non debordanti dalla convessità del capo. Protorace più o meno trasverso, con lobi oculari ben sviluppati. Prosterno con margine anteriore più o meno incavato, ma sempre senza solco mediano. Scutello da invisibile a ben sviluppato. Elitre a lati da paralleli ad arrotondati, da globose ad allungate. Zampe con femori clavati, i posteriori a volte con un dente; tibie con margine interno senza dentini; tarsi con terzo segmento, di solito, distintamente bilobato; unghie semplici.

Il ♂ si distingue dalla ♀ essenzialmente per il rostro lievemente più corto, ma soprattutto più fortemente carenato e punteggiato, per l'addome più appiattito e con più evidente concavità mediana lungo gli sterniti I e II.

POSIZIONE SISTEMATICA DEL GENERE. Fino a pochi anni fa il genere *Pachytychius* è sempre stato posto nella sottofamiglia Erirhininae, tribù Erirhinini. Tuttavia, recentemente tale sottofamiglia è stata oggetto di approfondita revisione (Thompson, 1992; Kuschel, 1995) e, sulla base della morfologia degli organi genitali maschili, è stata scissa in raggruppamenti molto distinti dal punto di vista filogenetico. Tutti i generi caratterizzati da lobo mediano di tipo "ortocero", cioè con lamina dorsale tegminale ben sviluppata (ad esempio come in Attelabidae e Apionidae), carattere ritenuto plesiomorfo, sono rimasti nella sottofamiglia Erirhininae (Kuschel, 1995) o formano ora la famiglia Erirhinidae (Thompson, 1992), mentre gli altri generi caratterizzati da parameri del tegmen ridotti, carattere considerato apomorfo, sono stati collocati in varie tribù della sottofamiglia Curculioninae. Per quanto riguarda *Pachytychius* non è ancora chiara la tribù di appartenenza: Alonso-Zarazaga (comun. pers.) ipotizza l'inclusione del genere nella tribù Storeini.

DIVISIONE DELLE SPECIE IN GRUPPI. Nella revisione dei *Pachytychius* della Regione Paleartica (Caldara, 1978), avevo effettuato un tentativo di divisione del genere in gruppi di specie sulla base sia di caratteristiche morfologiche esterne che del lobo mediano dell'edeago. In seguito, ho cercato di sviluppare un approccio di ricostruzione filogenetica del genere su base cladistica usando come sister-group il genere *Aubeonymus* Jacquelin du Val, 1854. I dati preliminari desunti da tale studio, tuttora in corso, sembrano avvalorare nel complesso i gruppi come da me inizialmente intesi.

Nelle regioni prese in esame dal presente studio, le specie appartengono a soli tre gruppi, due dei quali già delineati in base allo studio delle specie paleartiche ed uno apparentemente endemico dell'Africa meridionale, strettamente imparentati fra loro e facenti verosimilmente parte di un'unica linea evolutiva, come sembrerebbero dimostrare le marcate similarità nella forma degli organi genitali.

TABELLA DICOTOMICA DELLE SPECIE

1. Specie della Regione Afrotropicale 2
- Specie della Regione Orientale 13
2. Elitre allungate, da subrettangolari a debolmente subellittiche (figg. 1-4) 3
- Elitre corte, subovali (gruppo di *P. albosparsus*, figg.5-6) 12
3. Elitre con squame di due colori solitamente ben contrastanti fra loro, in ogni caso le più scure ricoprenti gran parte delle prime due interstrie da dove si dipartono a formare fasce e chiazze più o meno numerose e più o meno lunghe (gruppo di *P. haematocephalus*, figg. 3-4) 4
- Elitre con squame unicolori o di due colori poco contrastanti fra loro, in quest'ultimo caso le squame più chiare formano delle strisce più o meno complete su alcune interstrie dispari (gruppo di *P. aridicola*, figg. 1-2) 8
4. Pronoto con il punto più largo alla metà da dove si restringe lievemente e gradualmente, in modo subrettilineo, fino in prossimità dell'apice e bruscamente solo all'apice (fig. 32) . . . . . .6. *P. elongatus* (Gyllenhal)
- Pronoto con il punto più largo alla metà o oltre da dove si restringe bruscamente fino all'apice (figg. 31, 33-34) 5
5. Pronoto distintamente convesso sul disco e a lati fortemente arrotondati (fig. 34). Interstrie elitrali, soprattutto nel terzo apicale, con una Serie mediana irregolare di squame lievemente sollevate dai tegumenti, visibili guardando le elitre di profilo . . . . . .8. *P. lyali* n. sp.
- Pronoto moderatamente convesso sul disco e a lati moderatamente arrotondati (figg. 31, 33). Interstrie elitrali tutt'al più con isolate squame lievemente sollevate dai tegumenti 6
6. Disco del pronoto e prime due interstrie elitrali ricoperte da squame distintamente più scure delle altre. Tegumenti di protorace e di gran parte dell'addome nerastri. Pronoto fortemente e bruscamente ristretto all'apice (fig. 31) 7
- Disco del pronoto e prime due interstrie elitrali ricoperti da squame circa dello stesso colore delle altre. Tegumenti di protorace e addome completamente bruno-rossastri. Pronoto gradualmente ristretto nel terzo apicale (fig. 33) . . . . . .9. *P. beardae* n. sp.
7. Elitre più lunghe (Elu/Ela 1,54-1,58). Pronoto con il punto più largo nel terzo anteriore . . . . . .7. *P. leucoloma* Jekel
- Elitre più corte (Elu/Ela 1,45-1,48). Pronoto con il punto più largo alla metà . . . . . .10. *P. oberprieleri* n. sp.
8. Pronoto e soprattutto elitre con numerose squame strette o setole distintamente sollevate (figg. 1-2). Femori posteriori inermi o con piccolo dente 9
- Pronoto ed elitre con alcune squame tutt'al più debolmente sollevate. Femori posteriori con robusto dente 11
9. Femori posteriori inermi. Rivestimento dorsale costituito da squame setoliformi da moderatamente a molto allungate, in parte subcoricate (lu/la 5-7) e in parte sollevate (lu/la 8-9); queste ultime sulle elitre sono inclinate di 30-45 gradi rispetto al piano dorsale e sono ricurve all'indietro . . . . . .1. *P. cognatus* n. sp.
- Femori posteriori con piccolo dente. Rivestimento dorsale costituito da squame setoliformi più allungate, in parte subcoricate (lu/la 7-10) e in parte sollevate (lu/la 10-15); queste ultime sulle elitre sono inclinate di 60-90 gradi rispetto al piano dorsale e sono diritte 10
10. Rivestimento elitrale formato in massima parte da squame biancastre; ogni interstria presenta 4-5 serie irregolari di squame subcoricate (fig. 1) . . . . . .2. *P. setosus* Marshall
- Rivestimento elitrale formato da squame brune e squame biancastre; ogni interstria presenta 6-

7 serie irregolari di squame subcoricate (fig. 2) . . . . . .3. *P. erythreensis* Hustache
11. Pronoto con tre strisce strette di squame biancastre ben evidenti e ben delimitate, una centrale e due fra centro e lati. Rivestimento elitrale vittato. Pronoto moderatamente trasverso (Pla/Plu 1,21) . . . . . .5. *P. striatellus* n. sp.
- Rivestimento dorsale pressoché uniforme bianco-grigiastro. Pronoto fortemente trasverso (Pla/Plu 1,45) . . . . . .4. *P. aethiopicus* n. sp.
12. Elitre moderatamente convesse, con quarta, quinta, sesta e settima interstria elitrale fortemente convesse e formanti una protuberanza ottusa a livello della declività posteriore in vicinanza del loro apice, con omeri debolmente prominenti in avanti. Pronoto distintamente convesso, a lati non carenati (fig. 6) . . . . . .15. *P. tuberculatus* n. sp.
- Elitre fortemente convesse, con quarta, quinta, sesta e settima interstria elitrale di uguale convessità fino all'apice. con omeri fortemente prominenti in avanti. Pronoto appiattito soprattutto verso i lati, che sono carenati (fig. 5) . . . . . .14. *P. albosparsus* (Fåhraeus)
13. Dimensioni minori (lunghezza mm 2,6-3,2). Pronoto debolmente trasverso (Pla/Plu 1,15-1,20). Femori posteriori con piccolo dente. Sulle elitre le squame più scure ricoprono tutt'al più le prime due interstrie e formano qualche confusa chiazza sulle altre interstrie (fig. 4) . . . . . .13. *P. viciae* Marshall
- Dimensioni maggiori (lunghezza mm 3,9-5,0). Pronoto da moderatamente a fortemente trasverso (Pla/Plu 1,30-1,45). Femori posteriori con grosso dente. Sulle elitre le squame più scure ricoprono le prime due interstrie e formano numerose chiazze sulle altre interstrie 14
14. Pronoto meno trasverso (Pla/Plu 1,30-1,35), ricoperto quasi interamente da squame scure, alcune più chiare formano una confusa e stretta striscia longitudinale mediana e piccolissime chiazzette verso i lati . . . . . .12. *P. mungonis* Marshall
- Pronoto più trasverso (Pla/Plu 1,40-1,45), ricoperto almeno per la metà da squame chiare sia sul disco che ai lati . . . . . .11. *P. indicus* Tournier

KEY TO THE SPECIES

1. Species from the Afrotropical Region 2
- Species from the Oriental Region 13
2. Elytra elongate, subrectangular to weakly subelliptical (figs. 1-4) 3
- Elytra short, suboval (*P. albosparsus* group, figs. 5-6) 12
3. Elytra covered with scales which are usually of two distinctly different colours, with the darker covering most part of interstriae 1 and 2 and forming more–or-less numerous and more-or-less elongate transverse bands and spots (*P. haematocephalus* group, figs. 3-4) 4
- Elytra covered with scales which are unicolorous or of two scarcely different colours, in this latter case with the lighter scales forming more-or-less complete vittae on part of odd-numbered interstriae (*P. aridicola* group, figs. 1-2) 8
4. Pronotum widest at middle, gradually and rectilinearly narrowing to apex proximity and strongly narrowing only at apex (fig. 32) . . . . . .6. *P. elongatus* (Gyllenhal)
- Pronotum widest at middle or at after middle, strongly narrowing to apex (figs. 31, 33-34) . . .5
5. Pronotum distinctly convex on disc and with sides distinctly rounded (fig. 34); elytral interstriae, especially in apical third, with irregular median row of scales slightly raised and visible from lateral view . . . . . .8. *P. lyali* n. sp.
- Pronotum moderately convex on disc and with sides moderately rounded (figs. 31, 33); elytral interstriae at most with sparse scales slightly raised 6
6. Disc of pronotum and elytral interstriae 1 and 2 covered with scales distinctly darker than others; integument of prothorax and of most part of abdomen blackish; pronotum strongly and abruptly narrowed at apex (fig. 31) 7
- Disc of pronotum and elytral interstriae 1 and 2 covered with scales only slightly darker than others; integument of prothorax and abdomen completely brown reddish; pronotum gradually narrowing in apical third (fig. 33) . . . . . .9. *P. beardae* n. sp.
7. Elytra longer (length/width 1,54-1,58); pronotum widest at apical third . .7. *P. leucoloma* Jekel

- Elytra shorter (length/width 1,45-1,48); pronotum widest at middle . . .10. *P. oberprieleri* n. sp.
8. Pronotum and especially elytra with numerous narrow scales or setae distinctly raised (figs. 1-2); hind femora unarmed or with small tooth 9
- Pronotum and elytra with some scales at most slightly raised; hind femora with robust tooth 11
9. Hind femora unarmed; scales forming dorsal vestiture moderately to distinctly elongate (subrecumbent scales length/width 5-7, raised scales length/width 8-9); raised elytral scales at 30-45 degrees in relation to dorsal plane and backward . . . . . .1. *P. cognatus* n. sp.
- Hind femora with small tooth; scales forming dorsal vestiture more elongate (subrecumbent scales length/width 7-10, raised scales length/width 10-15); raised elytral scales at 60-90 degrees in relation to dorsal plane and straight 10
10. Elytral vestiture mostly composed of whitish scales; subrecumbent scales less adpressed (4-5 irregular series for each interstria) (fig. 1) . . . . . .2. *P. setosus* Marshall
- Elytral vestiture composed of brown and whitish scales; subrecumbent scales more adpressed (6-7 irregular series for each interstria) (fig. 2) . . . . . .3. *P. erythreensis* Hustache
11. Pronotum with three distint vittae of white scales, one midline and two laterally; elytral vestiture vittate; pronotum moderately transverse (width/length 1,21) . . . . . .5. *P. striatellus* n. sp.
- Dorsal vestiture nearly unicolorous, greyish-white; pronotum strongly transverse (width/length1,45) . . . . . .4. *P. aethiopicus* n. sp.
12. Elytra moderately convex, with interstriae 4, 5, 6 and 7 at apex proximity markedly convex and forming blunt tubercle, with humeri weakly prominent anteriorly; pronotum distinctly convex, not carinate at sides (fig. 6) . . . . . .15. *P. tuberculatus* n. sp.
- Elytra strongly convex, with interstriae 4, 5, 6 and 7 of same convexity to apex, with humeri strongly prominent anteriorly; pronotum flattened especially toward sides, which are carinate (fig. 5) . . . . . .14. *P. albosparsus* (Fåhraeus)
13. Body smaller (length mm 2.6-3.2); pronotum weakly transverse (width/length 1,15-1,20); hind femora with small tooth; on elytra dark scales covering at most interstriae 1 and 2 and forming some confused spots on others (fig. 4) . . . . . .13. *P. viciae* Marshall
- Body larger (length mm 3.9-5.0); pronotum moderately to strongly transverse (width/length 1,30-1,45); hind femora with robust tooth; on elytra dark scales covering interstriae 1 and 2 and forming numerous spots on others 14
14. Pronotum less transverse (width/length 1,30-1,35), covered nearly completely with dark scales, with some lighter scales forming a confused and narrow median longitudinal vitta and very small spot toward sides . . . . . .12. *P. mungonis* Marshall
- Pronotum more transverse (width/length 1,40-1,45), at least half of which covered with light scales both on disc and at sides . . . . . .11. *P. indicus* Tournier

ELENCO DELLE SPECIE

Gruppo di *Pachytychius aridicola*

Il gruppo presenta la combinazione dei seguenti caratteri: elitre allungate, da subrettangolari a debolmente subellittiche, ricoperte da squame solitamente allungate, da subrettangolari a decisamente piliformi, spesso in parte distintamente sollevate dai tegumenti, di colore chiaro e disposte uniformemente o formanti strisce sulle interstrie dispari; femori da inermi a fortemente dentati; lobo mediano a forma di corto tubo.

A questo gruppo appartengono tre specie della Regione Paleartica meridionale e cinque specie della Regione Afrotropicale (distribuzione in fig. 35). Il gruppo appare strettamente correlato filogeneticamente con quello di P. *haematocephalus*, dal quale differisce essenzialmente per la diversa forma e disposizione delle squame del rivestimento elitrale (vedi tabella dicotomica).

1. **Pachytychius cognatus** n. sp. (figg. 7, 20, 25)

DIAGNOSI. Un *Pachytychius* del gruppo *aridicola* con interstrie elitrali ricoperte da squame prevalentemente biancastre, moderatamente allungate, disposte in 4-5 serie irregolari, in parte subcoricate e in parte sollevate di 30-45 gradi rispetto al piano dorsale e ricurve all'indietro, con pronoto moderatamente trasverso, con femori posteriori inermi.

LOCALITÀ TIPICA. Gibuti, El Hadj.

SERIE TIPICA. Holotypus ♂: [Gibuti] "El Hadj, Dr. Martin / Sig. R. Oberthür (Coll. C. Martin), Eing. Nr. 4, 1956" (ZMKB).Paratypi: 1 ♂ "Gizan am Roten Meer, 25-26.III.1983 / Saudi Arabia, C. Holzschuh" (NHMB); 1 ♂ "Yemen, 1 mile W. of Ta'izz, on road to Mocha, ca. 4,500 ft., 20.xii.1937 / From *Indigofera* bushes / B.M. Exp. to S.W. Arabia, H. Scott & E.B. Britton, B.M. 1938-246" (BMNH); 1 ♂ "W. Aden Prot., Wadi Tiban, N.W. of Jebel Jihaf, ca. 3,800 ft., 22.x.1937 / Beaten from *Indigofera* bushes / B.M. Exp. to S.W. Arabia, H. Scott & E.B. Britton, B.M. 1938-246 / *Pachytychius*, J Balfour-Browne" (BMNH); 1 ♀ "Sudan, Wad Medani a Bl. Nil, 22.10.1979, lux, leg. Hieke" (MNHB); 1 ♀, idem eccetto "23.10.1979" (RCCM).

DESCRIZIONE. ♂ (holotypus). Lunghezza mm 2,7.

Tegumenti interamente bruni; sul dorso ben visibili fra il rivestimento formato da squame moderatamente allungate (lu/la 5-7), strettamente lanceolate, biancastre, da coricate a moderatamente sollevate, disposte in 4-5 serie molto irregolari per ogni interstria; squame un poco più lunghe (lu/la 8-9) e più sollevate formano una serie abbastanza regolare su ogni interstria elitrale. Strie elitrali con una serie poco evidente di squame più piccole e strette di quelle delle interstrie. Parte ventrale ricoperta abbastanza fittamente da squame biancastre lunghe (lu/la 7-9), da coricate a subcoricate.

Rostro un poco più lungo del pronoto (Rlu/Plu 1,16), visto dorsalmente a lati paralleli, visto di lato distintamente e regolarmente arcuato, debolmente ristretto dall'inserzione delle antenne all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo più robusto e circa 1,3 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto moderatamente trasverso (Pla/Plu 1,28), a lati moderatamente arrotondati, con il punto di maggior larghezza alla metà, moderatamente convesso, con punteggiatura fitta e abbastanza regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari moderatamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello grande, ben visibile.

Elitre allungate (Elu/Ela 1,52), a lati subparalleli, con margine anteriore moderatamente concavo, con omeri non prominenti in avanti e subarrotondati, discretamente più larghe del pronoto (Ela/Pla 1,32), moderatamente convesse. Interstrie subpiane; strie formate da punti grossi e profondi, debolmente visibili fra il rivestimento e larghe poco meno delle interstrie.

Femori posteriori inermi; terzo segmento tarsale bilobato e moderatamente più largo del secondo.

Edeago come in fig. 7.

♀ (paratypus). Rostro un poco più lungo (Rlu/Plu 1,24). Spiculum ventrale e spermateca come in figg. 20 e 25.

VARIABILITÀ. Per quanto riguarda i paratypi, le dimensioni variano da 2,6 a 3,0 mm. Sul

pronoto può essere più o meno evidente una stretta striscia longitudinale mediana di squame un poco più bianca delle altre, mentre squame brunastre possono essere presenti verso i lati o alla base in regione paramediana, dove formano una piccola chiazza poco evidente. Anche sulle elitre squame brunastre possono formare chiazzette più o meno numerose e più o meno evidenti, mentre le squame biancastre possono essere più fitte alla base di terza e quinta interstria e in regione omerale. Rlu/Plu ♂ 1,10-1,18, ♀ 1,22-1,27; Pla/Plu 1,25-1,32; Elu/Ela 1,49-1,56; Ela/Pla 1,29-1,35.

ETIMOLOGIA. L'aggettivo latino "*cognatus*" (vicino, imparentato) vuole evidenziare la stretta parentela della specie con *P. setosus.*

CONSIDERAZIONI E NOTE COMPARATIVE. Specie strettamente imparentata con *P. setosus*, e con tale nome classificata da Voss (1962), ma sicuramente distinta da questa per la costante differenza nel tipo di rivestimento dorsale (vedi tabella). Per il rivestimento del pronoto, a volte caratterizzato da due chiazze più scure poco evidenti alla base, si può avvicinare a *P. basimaculatus* Voss, 1964, anch'esso diffuso nel Sudan (Caldara, 1978), dal quale differisce per le minori dimensioni (mm 2,6-3,0 invece di mm 3,7-4,2), per le elitre distintamente più corte e per la serie di squame un poco sollevate sulla parte mediana delle interstrie elitrali.

NOTE BIOLOGICHE. Come riportato sui cartellini (vedi sopra), due paratypi risultano raccolti battendo rami di *Indigofera* sp. (Fabaceae) in due località differenti.

DISTRIBUZIONE. Sudan, Gibuti, Yemen, Arabia Saudita.

MATERIALE ESAMINATO. Oltre agli esemplari della serie tipica (vedi sopra), 1 ♂ etichettato "Arabia, Buraim. 19-20.v.1936, H.St.J.B. Philby, B.M. 1936-521" (BMNH), che non ho considerato come paratypus perché un poco differente dagli altri esemplari a causa dei lati di pronoto ed elitre distintamente più arrotondati.

2. *Pachytychius setosus* Marshall (figg. 1, 8)

Pachytychius setosus Marshall, 1950: 209.

DIAGNOSI. Un *Pachytychius* del gruppo *aridicola* con interstrie elitrali ricoperte da squame prevalentemente biancastre, molto lunghe, disposte in 4-5 serie irregolari, in parte subcoricate e in parte sollevate di 60-90 gradi rispetto al piano dorsale e diritte, con pronoto moderatamente trasverso, con femori posteriori con piccolo dente.

LOCALITÀ TIPICA. Niger, Aïr, Agadez.

SERIE TIPICA. Specie descritta su due esemplari del Niger (Aïr: Agadez e Monti Beguezans). Non ho esaminato l'holotypus di Agadez conservato nell'Institut Français d'Afrique Noire di Dakar, mentre ho potuto studiare il paratypus etichettato "Cotype / Irabellaben, Mts. Baguezans, 1200-1300 m, 26-31.VIII.1947, Ifan, L. Chopard A. Villiers / *Pachytychius setosus* Mshl., Cotype ♀" (BMNH).

RIDESCRIZIONE. ♂. Lunghezza mm 3,3.

Tegumenti interamente bruno-rossastri; sul dorso ben visibili fra il rivestimento formato da squame molto lunghe (lu/la 7-9), strettamente lanceolate, biancastre e in minima parte bruno-grigiastre, da coricate a moderatamente sollevate, ricoprenti il pronoto (dove le biancastre formano tre fasce longitudinali moderatamente evidenti, una centrale più stret-

ta e due laterali) e le interstrie elitrali (dove sono disposte irregolarmente, grosso modo in 4-5 serie, e dove le biancastre ricoprono prevalentemente le interstrie dispari dando all'insetto un aspetto vagamente vittato), e distintamente allungate (lu/la 10-12), piliformi, suberette, formanti una serie centrale irregolare su ogni interstria elitrale. Strie con una serie di squame molto sottili, ma più corte di quelle delle interstrie. Parte ventrale ricoperta abbastanza fittamente da squame biancastre, lunghe (lu/la 9-12), da coricate a suberette.

Rostro moderatamente più lungo del pronoto (Rlu/Plu 1,15), visto dorsalmente a lati subparalleli, debolmente divergenti all'apice, visto di lato distintamente e regolarmente arcuato, debolmente ristretto nella parte apicale. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo un poco più robusto e circa 1,2 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto moderatamente trasverso (Pla/Plu 1,34), a lati moderatamente arrotondati, con il punto di maggior larghezza alla metà, moderatamente convesso, con punteggiatura fitta e abbastanza regolare, con intervalli fra i punti stretti e moderatamente lucidi. Lobi oculari moderatamente pronunciati. Prosterno debolmente incavato nel mezzo.

Scutello grande, ben visibile.

Elitre allungate (Elu/Ela 1,52), a lati molto debolmente curvilinei nei due terzi anteriori, con margine anteriore moderatamente concavo, con omeri non prominenti in avanti e subarrotondati, discretamente più larghe del pronoto (Ela/Pla 1,33), debolmente convesse. Interstrie subpiane; strie formate da punti grossi e profondi, debolmente visibili fra il rivestimento e larghe poco meno delle interstrie.

Femori posteriori con un piccolo dente aguzzo; terzo segmento tarsale bilobato e moderatamente più largo del secondo.

Edeago come in fig. 8.

♀. Rostro un poco più lungo (Rlu/Plu 1,22). Spiculum ventrale e spermateca come in *P. cognatus* (figg. 20 e 25).

VARIABILITÀ. La lunghezza è compresa fra 2,7 e 3,7 mm. Il pronoto varia discretamente per larghezza. Rlu/Plu ♂ 1,12-1,16, ♀ 1,21-1,26; Pla/Plu 1,27-1,36; Elu/Ela 1,50-1,58; Ela/Pla 1,26- 1,35.

CONSIDERAZIONI E NOTE COMPARATIVE. Specie intermedia fra *P. cognatus* e *P. erythreensis*, dai quali si separa essenzialmente per la differente disposizione del rivestimento elitrale (vedi tabella), caratterizzato da una serie di squame setoliformi più sollevate e diritte che in *P. cognatus*, ma meno erette e meno piliformi che in *P. erythreensis*.

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Niger, Chad, Sudan, Etiopia, Yemen, Arabia Saudita.

MATERIALE ESAMINATO. Oltre al paratypus (vedi sopra), altri 46 esemplari. Chad: Tchad, Distr. Kanem, N' Gouri, X/XI.1958, P. Renaud, ex coll. Dr. Breuning (3, MACT). Sudan: Sudan, Prov. N. Darfur, El Fasher (3, MNHB; 2, HNHM); Brit. Sudan, Khartoum, 15.X.1924, N. B. Johnson (1, BMNH); Sudan Govt., Khartoum, H. W. Bedford, 9.IX.1928, At light (1, BMNH); Sudan, Kutum, m 1140 (3, HNHM); Sudan, Senaar a Bl. Nil, lux (3, MNHB); Sudan, Wad Medani a Bl. Nil, 29.X.1979, lux, leg. Hieke (4, BMNH; 20, MNHB; 3, RCCM). Etiopia: Etiopia, Bati (1, HNHM). Yemen: Arabia merid., Yemen, leg. Scortecci, Est di Radà, Rocce Nere, m 1880, 22.IX.1965 (1, MSNM). Arabia Saudita: Sahl Rakbah, 2-3.VI.1982, Saudi Arabien, W. Buttiker (1, NHMB).

3. *Pachytychius erythreensis* Hustache (figg. 2, 9)

Pachytychius erythreensis Hustache, 1932: 43.

Pachytychius setosus subsp. *transmutatus* Voss, 1962: 197 **n. syn.**

DIAGNOSI. Un *Pachytychius* del gruppo *aridicola* con interstrie elitrali ricoperte da squame brune e biancastre, fortemente allungate, piliformi, disposte in 6-7 serie irregolari, in parte subcoricate e in parte sollevate di 60-90 gradi rispetto al piano dorsale e diritte, con pronoto moderatamente trasverso, con femori posteriori con piccolo dente.

LOCALITÀ TIPICA. Eritrea, Adua.

SERIE TIPICA. Specie descritta su tre esemplari raccolti ad Adua in Eritrea (Hustache non designa l'holotypus) e dei quali ne ho esaminati due (♂♂, DEIE), uno etichettato "Coll. Pape / Adua, Eritrea / *Pachytychius erythreensis* m. type, Hustache det. / Holotypus" (lectotypus qui designato) e l'altro "Coll. Pape / Adua, Eritrea / Hustache det. / Paratypus" (paralectotypus).

SINONIMI. Voss descrive la subsp. *transmutatus* di P. *setosus* su un unico esemplare raccolto in Gibuti paragonandolo a *P. erythreensis*. Ho esaminato tale esemplare (ZMKB) etichettato "La Sarrat, Dr. Martin / Chemin de fer Djibouti-Harrar Kilom. 163 / Holotypus" che non mostra nessuna sostanziale differenza dagli esemplari della serie tipica di *P. erythreensis*.

RIDESCRIZIONE. ♂. Lunghezza mm 3,0.

Tegumenti bruno-rossastri ad eccezione del protorace bruno-nerastro; sul dorso un poco visibili fra il rivestimento formato da squame molto lunghe (lu/la 7-10), strettamente lanceolate, biancastre e brune, da coricate a lievemente sollevate, ricoprenti il pronoto (dove le biancastre formano una stretta fascia longitudinale mediana) e le interstrie elitrali (dove sono fitte, disposte irregolarmente e in parte un poco embricate, e dove le biancastre ricoprono la base della terza interstria, gli omeri e formano alcune chiazzette sparse poco evidenti), e fortemente allungate (lu/la 13-15), piliformi, da suberette a erette, formanti una serie centrale abbastanza regolare su ogni interstria elitrale. Strie con una serie di squame molto sottili, ma più corte di quelle delle interstrie. Parte ventrale ricoperta abbastanza fittamente da squame brune lunghe (lu/la 7-9), da coricate a subcoricate.

Rostro moderatamente più lungo del pronoto (Rlu/Plu 1,17), visto dorsalmente a lati subparalleli, visto di lato distintamente ricurvo nel terzo basale, moderatamente arcuato nei due terzi apicali, debolmente e gradualmente ristretto dalla base all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo un poco più robusto e circa 1,5 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto moderatamente trasverso (Pla/Plu 1,20), a lati un poco arrotondati dalla base fino in prossimità dell'apice dove si restringono bruscamente e angolosamente, con il punto di maggior larghezza fra terzo medio e terzo apicale, discretamente convesso, con punteggiatura fitta e abbastanza regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari moderatamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello grande, ben visibile.

Elitre allungate (Elu/Ela 1,45), a lati molto debolmente curvilinei nei due terzi anteriori (Ela/Pla 1,35), con margine anteriore moderatamente concavo, con omeri non prominenti in avanti e subarrotondati, discretamente più larghe del pronoto (Ela/Pla 1,36), moderatamente convesse. Interstrie subpiane; strie formate da punti grossi e profondi, debol-

Figg. 1-6. Habitus di: 1 – *Pachytychius setosus* Marshall; 2 – *P. erythreensis* Hustache; 3 – *P. leucoloma* Jekel; 4 – *P. viciae* Marshall; 5 – *P. albosparsus* (Fåhraeus); 6 – *P. tuberculatus* n. sp. Non in scala.

mente visibili fra il rivestimento e larghe poco meno delle interstrie.

Femori posteriori con un piccolo dente aguzzo; terzo segmento tarsale bilobato e moderatamente più largo del secondo.

Edeago come in fig. 9.

♀. Rostro un poco più lungo (Rlu/Plu 1,21). Spiculum ventrale e spermateca come in *P. cognatus* (figg. 20 e 25).

VARIABILITÀ. La lunghezza è compresa fra 2,6 e 3,5 mm (il lectotypus misura mm 3,4). A parte le dimensioni nessun'altra variazione degna di nota negli esemplari esaminati. Rlu/Plu

♂ 1,15-1,18, ♀ 1,20-1,25; Pla/Plu 1,19-1,25; Elu/Ela 1,44-1,47; Ela/Pla 1,33-1,38.

CONSIDERAZIONI E NOTE COMPARATIVE. Per la presenza di una serie di lunghe setole piliformi erette sulle interstrie elitrali, la specie può essere confusa esclusivamente con *P. setosus,* le cui squame setoliformi sollevate dai tegumenti elitrali sono tuttavia in massima parte biancastre e più larghe alla base che all'apice.

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Eritrea, Etiopia.

MATERIALE ESAMINATO. Oltre ai due syntypi (vedi sopra), altri 7 esemplari. Eritrea: Asmara, Mai Cuiet, 4.V.1947, 2350 mts., G. de Lotto (3, BMNH); Eritrea, Gura, XII.36-III.37, leg. Nicotra (2, DBAU). Etiopia: Ethiopia, P. Vayssiert (1, MHNP); Ethiopia, Shoa, Lake Langano, V.1989, leg. K. Werner (1, ARCF).

4. **Pachytychius aethiopicus** n. sp.

DIAGNOSI. Un *Pachytychius* del gruppo *aridicola* con interstrie elitrali ricoperte da squame bianco-grigiastre, poco allungate, disposte in 3-4 serie irregolari, da coricate a subcoricate, con pronoto fortemente trasverso, con femori posteriori con grosso dente.

LOCALITÀ TIPICA. Etiopia, El Dirk.

SERIE TIPICA. Holotypus ♀: [Etiopia] "El Dirk, 22.5.1939 / Miss. E. Zavattari, Sagan-Omo A.O.I." (MHNP).

DESCRIZIONE. ♀ (holotypus). Lunghezza mm 4,4.

Tegumenti bruno-rossastri ad eccezione di protorace e addome bruno scuri; sul dorso ben visibili fra il rivestimento formato da squame poco allungate (lu/la 2,5-4), subellittiche, in massima parte biancastre, solo alcune un poco più scure, bruno-grigiastre, sparse sul pronoto e formanti chiazzette scarsamente evidenti sulle elitre, da coricate (in massima parte) a subcoricate, disposte in 3-4 serie molto irregolari per ogni interstria. Strie elitrali con una serie poco evidente di squame più piccole e strette di quelle delle interstrie. Parte ventrale ricoperta poco fittamente da squame moderatamente allungate (lu/la 4-6).

Rostro discretamente più lungo del pronoto (Rlu/Plu 1,20), visto dorsalmente a lati paralleli distintamente divergenti nella parte apicale, visto di lato distintamente e regolarmente arcuato, debolmente ristretto dall'inserzione delle antenne all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo più robusto e circa 1,5 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto fortemente trasverso (Pla/Plu 1,45), a lati moderatamente arrotondati nel terzo basale, dove è posto il punto più largo, quasi subrettilinei nel terzo medio e ancora distintamente arrotondati nel terzo apicale dove si restringono fortemente, moderatamente convesso, con punteggiatura fitta e abbastanza regolare ad eccezione di una stretta striscia mediana longitudinale liscia, con intervalli fra i punti stretti e lucidi. Lobi oculari distintamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello grande, ben visibile.

Elitre allungate (Elu/Ela 1,46), a lati subparalleli, con margine anteriore debolmente concavo, con omeri non prominenti in avanti e subarrotondati, lievemente più larghe del pronoto (Ela/Pla 1,12), moderatamente convesse. Interstrie subpiane; strie formate da punti

grossi e profondi, debolmente visibili fra il rivestimento e larghe poco meno delle interstrie.

Femori posteriori con un grosso dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Spiculum ventrale e spermateca come *in P. cognatus* (figg. 20 e 25).

♂. Non noto.

ETIMOLOGIA. Il nome si riferisce alla regione geografica nella quale è stata raccolta la specie.

CONSIDERAZIONI E NOTE COMPARATIVE. Per il robusto dente dei femori posteriori e per le squame dorsali coricate può essere comparato esclusivamente con *P. striatellus* che, tuttavia, ha rivestimento più fitto costituito da squame biancastre disposte a strisce sul pronoto e ricoprenti le interstrie elitrali dispari, nonché pronoto meno trasverso.

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Specie nota solo della località tipica, situata nell'Etiopia meridionale.

MATERIALE ESAMINATO. Nessun altro esemplare oltre all'holotypus (vedi sopra).

5. **Pachytychius striatellus** n. sp. (figg. 10, 26)

DIAGNOSI. Un *Pachytychius* del gruppo *aridicola* con interstrie elitrali ricoperte da squame che sono di colore bianco su quelle dispari e bruno su quelle pari, poco allungate, disposte in 3-4 serie irregolari, da coricate a subcoricate, con pronoto moderatamente trasverso, con femori posteriori con grosso dente.

LOCALITÀ TIPICA. Kenya, Longonot, Nakuru.

SERIE TIPICA. Holotypus: ♂ " Kenya: Nakuru pr. Longonot, 2000 m, 10.XI.77. Mahnert, Perret" (MHNG). Paratypi: 1 ♂ e 1 ♀ con le stesse indicazioni dell'holotypus (MHNG, RCCM); 1 ♀ [Kenya] "Dr. van Someren, Naivasha, 3.24, V.G.L. van Someren Collection, Brit. Mus. 1959-468" (BMNH).

DESCRIZIONE. ♂ (holotypus). Lunghezza mm 2,8.

Tegumenti bruno ferruginei, sul dorso quasi completamente nascosti dal fitto rivestimento formato da squame poco allungate (lu/la 2-4), da ellittiche a sublanceolate, sul pronoto brune e biancastre, queste ultime formanti tre strette strisce, una mediana e due situate verso i lati, sulle elitre grigio-brune e biancastre, le seconde ricoprenti le interstrie dispari così da formare un disegno a strisce, da coricate a subcoricate (queste ultime più scarse e disposte lungo la linea mediana), disposte in 3-4 serie irregolari per ogni interstria. Parte ventrale ricoperta fittamente da squame grigio-brunastre e biancastre, moderatamente allungate (lu/la 3-4), coricate.

Rostro un poco più corto del pronoto (Rlu/Plu 0,97), visto dorsalmente a lati paralleli dalla base all'apice, visto di lato distintamente e regolarmente arcuato, debolmente ristretto dall'inserzione delle antenne all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo più robusto e circa 1,3 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto moderatamente trasverso (Pla/Plu 1,21), a lati molto debolmente arrotondati fin dalla base, con il punto più largo alla metà, debolmente convesso, con punteggiatura

fitta e abbastanza regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari distintamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello di medie dimensioni, ben visibile.

Elitre allungate (Elu/Ela 1,45), subrettangolari, con margine anteriore debolmente concavo, con omeri non prominenti in avanti e arrotondati, moderatamente più larghe del pronoto (Ela/Pla 1,24), moderatamente convesse. Interstrie subpiane; strie ben visibili, formate da punti profondi e ben visibili, distintamente più strette delle interstrie.

Femori posteriori con un distinto dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 10.

♀ (paratypus). Rostro lievemente più lungo (Rlu/Plu 1,04). Spiculum ventrale come in *P. cognatus* (fig. 20), spermateca come in fig. 26.

VARIABILITÀ. La lunghezza varia da 2,8 a 3,2 mm. Il contrasto fra squame chiare e scure del rivestimento elitrale è più o meno marcato; in due paratipi l'interstria suturale è ricoperta da squame scure. Rlu/Plu ♂ 0,97-0,99, ♀ 1,04-1,07; Pla/Plu 1,20-1,24; Elu/Ela 1,43-1,46; Ela/Pla 1,20-1,24.

ETIMOLOGIA. L'aggettivo latino "*striatellus*" vuole sottolineare la principale caratteristica della specie e cioè il disegno elitrale a strisce.

CONSIDERAZIONI E NOTE COMPARATIVE. E' la specie del gruppo con distribuzione più meridionale. Dalle altre specie del gruppo considerate in questa sede si distingue facilmente, insieme a *P. aethiopicus*, per la mancanza di squame sollevate sia sulle elitre che sul pronoto. Anche da *P. aethiopicus*, comunque, si può separare senza difficoltà per i caratteri riportati in tabella. Presenta maggiori affinità morfologiche con *P. aridicola* (Wollaston, 1864), specie largamente diffusa nel Nord Africa (Caldara, 1978, 1984), dal quale differisce per la presenza di dente ai femori posteriori ed il rivestimento formato da squame più larghe e più compatte; gli stessi caratteri, oltre alle differenze di rivestimento del pronoto, servono per separare *P. striatellus* da *P. basimaculatus* Voss, 1964, la cui diffusione arriva fino al Sudan settentrionale.

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Kenya meridionale.

MATERIALE ESAMINATO. Solo gli esemplari della serie tipica (vedi sopra).

Gruppo di *Pachytychius haematocephalus* (Gyllenhal)

Il gruppo presenta la combinazione dei seguenti caratteri: elitre allungate, da subrettangolari a debolmente subellittiche, con squame in massima parte moderatamente allungate e coricate, solitamente di due colori ben contrastanti fra loro, in ogni caso le più scure ricoprenti gran parte delle prime due interstrie da dove si dipartono a formare fasce e chiazze più o meno numerose e più o meno lunghe; femori posteriori con dente solitamente grosso; lobo mediano a forma di corto tubo.

Al gruppo appartengono una dozzina di specie della Regione Paleartica, cinque specie della regione afrotropicale e le uniche tre specie per ora note della Regione Orientale

(distribuzione in fig. 36). Esso può essere separato dal gruppo di *P. aridicola* per il differente tipo di rivestimento elitrale e dal gruppo di *P. albosparsus* per le elitre allungate (vedi tabella dicotomica).

6. *Pachytychius elongatus* (Gyllenhal) (figg. 14, 21, 27, 32)

Tychius elongatus Gyllenhal, [1835]: 414.

Pachytychius elongatus (Gyllenhal), Jekel, 1861: 272. Tournier, 1874: 456. Risbec, 1947: 61. Caldara, 1989: 55.

Pachytychius congoanus Hustache, 1923: 20. **n. syn.**

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con pronoto con il punto più largo alla metà da dove si restringe lievemente e gradualmente, in modo subrettilineo, fino in prossimità dell'apice e bruscamente solo all'apice (fig. 32).

LOCALITÀ TIPICA. Senegal.

SERIE TIPICA. Descritto su esemplari del Senegal, senza più precise indicazioni, dei quali ho esaminato un ♂ (NHRS) etichettato "Typus / *T. elongatus* Chevr. / Senegal" (lectotypus qui designato).

SINONIMI. Hustache descrive *P. congoanus* su esemplari raccolti a Fort Lamy (Bas Chari, Chad) senza paragonare la sua nuova specie ad altre del genere. Ho esaminato un syntypus ♂ di *P. congoanus* etichettato "Fort Lamy, Congo Français / *Pachytychius congoanus* m., Hustache det." (MHNP, lectotypus qui designato) perfettamente corrispondente alla descrizione originale. Esso non mostra alcuna differenza, anche nella morfologia degli organi genitali, da *P. elongatus*.

RIDESCRIZIONE. ♂. Lunghezza mm 5,6.

Tegumenti nerastri ad eccezione di rostro, antenne, elitre, tarsi e addome bruno scuri; sul dorso poco visibili fra il fitto rivestimento formato da squame moderatamente allungate (lu/la 3-5), subellittiche, coricate, di due colori ben distinti: grigiastre, che sono prevalenti, e brune. Queste ultime sono più frequenti sul disco del pronoto in sede paramediana, mentre sulle elitre ricoprono una parte prevalente delle prime due interstrie, da dove si diramano corte fasce trasversali, e formano alcune piccole chiazze sparse. Parte ventrale ricoperta fittamente da squame bianco-grigiastre e bruno chiare frammiste fra loro, moderatamente allungate (lu/la 4-6), coricate.

Rostro poco più lungo del pronoto (Rlu/Plu 1,03), visto dall'alto a lati paralleli dalla base fino in prossimità dell'apice dove si allargano debolmente, visto di lato distintamente e regolarmente arcuato, lievemente ristretto dall'inserzione delle antenne all'apice. Antenne inserite al terzo apicale; primo segmento del funicolo lievemente più grosso e circa 1,5 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto moderatamente trasverso (Pla/Plu 1,35), a lati moderatamente curvilinei fin dalla base, con il punto più largo alla metà, da dove si restringono lievemente e gradualmente in modo subrettilineo fino in prossimità dell'apice e bruscamente all'apice (fig. 32), debolmente convesso, con punteggiatura fitta e regolare, con intervalli fra i punti lisci e lucidi. Lobi oculari distintamente pronunciati. Prosterno distintamente incavato nel mezzo.

Scutello grande e ben visibile.

Elitre allungate (Elu/Ela 1,53), a lati subparalleli nei due terzi anteriori, con margine

anteriore debolmente concavo, con omeri debolmente prominenti in avanti e arrotondati, lievemente più larghe del pronoto (Ela/Pla 1,11), moderatamente convesse. Interstrie piane; strie poco visibili fra il rivestimento, formate da punti stretti e profondi, distintamente più strette delle interstrie.

Femori posteriori con grosso e aguzzo dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 14.

♀. Rostro discretamente più lungo (Rlu/Plu 1,18). Spiculum ventrale e spermateca come in figg. 21 e 27.

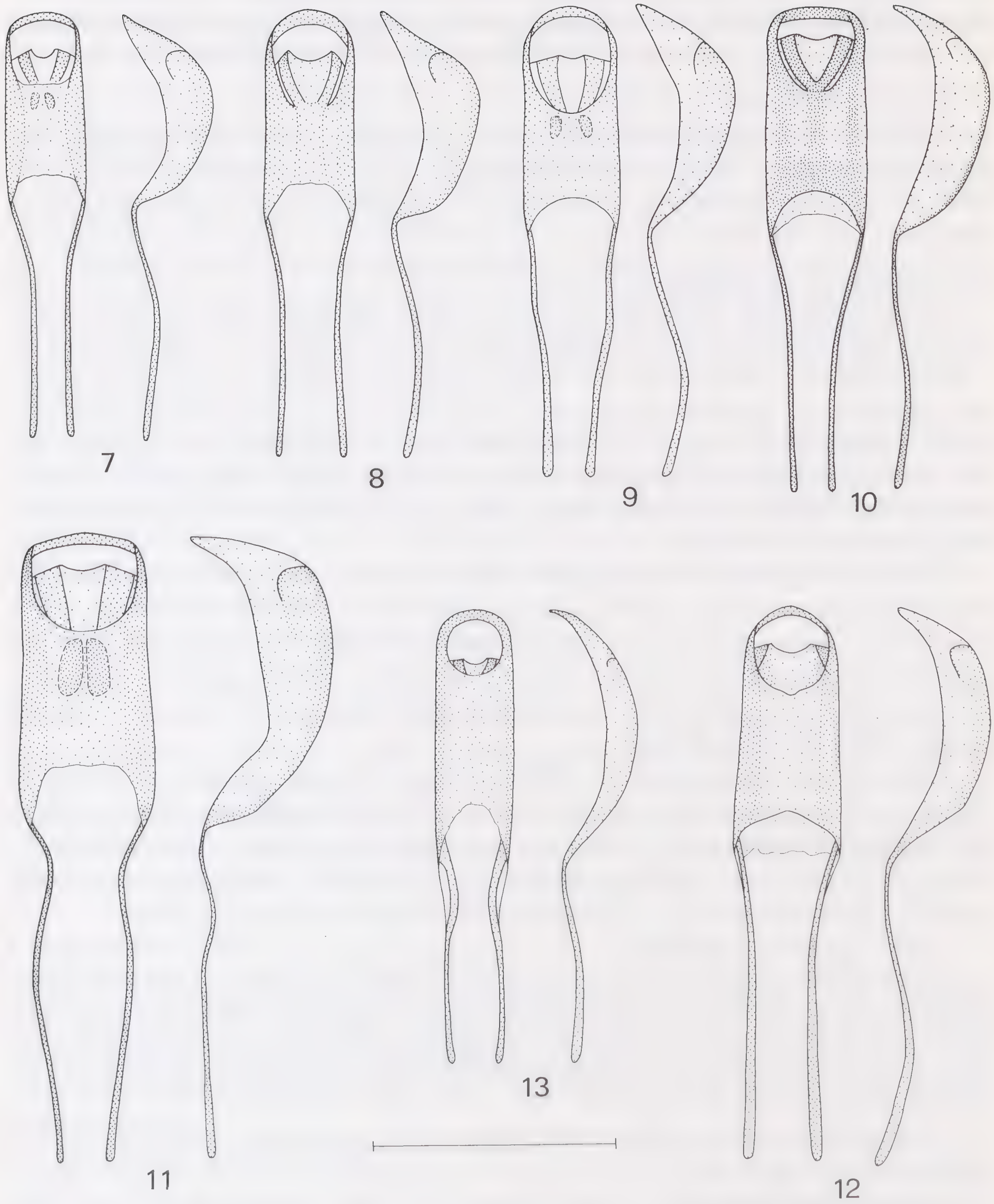
VARIABILITÀ. Le dimensioni sono comprese fra 5,0 e 6,3 mm (media 5,8 mm, che è anche la misura del lectoytpus). Per quanto riguarda il rivestimento, a volte le squame chiare prevalgono decisamente anche sulle prime due interstrie elitrali, altre volte le nere formano chiazze molto numerose sulle elitre. Il pronoto ha abbastanza frequentemente il punto di maggior larghezza nel terzo basale. Rlu/Plu ♂ 1,01-1,06, ♀ 1,13-1,19; Pla/Plu 1,32-1,38; Elu/Ela 1,51-1,59; Ela/Pla 1,09-1,15.

CONSIDERAZIONI E NOTE COMPARATIVE. Fra le specie afrotropicali, forma un gruppo morfologicamente molto uniforme con *P. leucoloma*, *P. lyali*, *P. beardae* e *P. oberprieleri*. Da tutte queste, e in particolar modo da *P. leucoloma,* con il quale sembra convivere in alcune zone (ma verosimilmente su una diversa pianta ospite), differisce solitamente per le maggiori dimensioni (sempre superiori a 5 mm) e per la caratteristica forma del pronoto, poco allargato nella metà apicale e bruscamente ristretto solo all'apice.

NOTE BIOLOGICHE. Risbec (1947) descrive il ciclo biologico della specie sulla leguminosa *Sesbania aegyptiaca* L. L'accoppiamento avviene quando la ♀ ha già iniziato da oltre mezz'ora la perforazione del baccello, solitamente in corrispondenza della sua estremità distale. Dopo l'accoppiamento, che dura circa dieci minuti, la ♀ riprende il lavoro che la impegna circa per un'altra ora. Una volta completato il foro, essa depone un uovo in prossimità di un seme, dopo di che ricomincia la stessa operazione a circa 2 cm di ditanza dal buco precedente dirigendosi verso la base del baccello. Dall'uovo, che si presenta ovale, liscio e giallastro ed ha una lunghezza di circa 1 mm, esce una larva di colore avorio che inizia a mangiare il seme più vicino. A maturazione essa misura circa 6-7 mm. Sebbene l'adulto sembri preferire nettamente le piante di *Sesbania*, esso è stato osservato nutrirsi dei baccelli di *Indigofera* sp. sempre da Risbec, che tuttavia non ha mai trovato uova o larve al loro interno.

DISTRIBUZIONE. Africa occidentale, dal Senegal all'Angola.

MATERIALE ESAMINATO. Oltre agli esemplari delle serie tipiche (vedi sopra), altri 33 esemplari. Senegal: Senegal, coll. Jekel (1, MSNM); Senegal, ex Desbrochers (1, MSNM); Sénégal, Coll. Roelofs (1, ISNB); Sénégal, Coll. Dejean (4, ISNB); Sénégal, Coll. Castelnau (1, ISNB); Senegal, Bambey, 30.X.1940, J. Risbec, on millet (2, BMNH); idem eccetto 1946 (2, BMNH); idem eccetto 15.I.1945, on *Sesbania aegyptiaca* (7, BMNH); Bambey, Coll. Jekel (2, MSNM); Senegal, Sébikotane, 20/1/1946, H. Durand (4, MHNP). Nigeria: Kano, N. Nigeria, Nov. 1951, W. E. S. Merrett (1, BMNH). Gabon: Gabon, coll. Jekel (1, MSNM). Angola: Angola, Luanda, 20.viii.1949, G. R. Gradwell & D. Snow (1, BMNH); Angola, 76.28 (3, BMNH). Senza indicazioni (2, BMNH).



Figg. 7-13. Edeago di: 7 – *Pachytychius cognatus* n. sp.; 8 – *P. setosus* Marshall; 9 – *P. erythreensis* Hustache; 10 – *P. striatellus* n. sp.; 11 – *P. albosparsus* (Fåhraeus); 12 – *P. tuberculatus* n. sp.; 13 – *P. viciae* Marshall. Scala = mm 0,50.

7. *Pachytychius leucoloma* Jekel (figg. 3, 15, 31)

Pachytychius leucoloma Jekel, 1861: 272.

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con pronoto moderatamente trasverso, a lati moderatamente arrotondati fin dalla base, con il punto più largo nel terzo anteriore da dove si restringe nettamente fino all'apice (fig. 31), moderatamente convesso.

LOCALITÀ TIPICA. Senegal.

SERIE TIPICA. Specie descritta sinteticamente da Jekel su esemplari del Senegal (coll. Dejean), dei quali ho esaminato una ♀ (ISNB) etichettata "Sénégal / Coll. Dejean, Coll. Roelofs / *Tychius leucoloma* m., L. in Senegal, D. Damosin / *Pachytychius leucoloma* Jekel / Type" (lectotypus qui designato).

RIDESCRIZIONE. ♂. Lunghezza mm 4,2.

Tegumenti nerastri ad eccezione di rostro, antenne, elitre, tarsi e addome bruno scuri; sul dorso poco visibili fra il fitto rivestimento formato da squame poco allungate (lu/la 2-4), da subellittiche a subovali, coricate, di due colori ben contrastanti: biancastre e bruno scure, queste ultime ricoprono interamente il disco del pronoto e quasi completamente le prime e le ultime due interstrie delle elitre dove formano anche alcune fasce trasverse, che vanno dalla sutura alla quarta interstria, e alcune chiazzette sparse. Parte ventrale ricoperta fittamente da squame bianco-grigiastre e bruno chiare frammiste fra loro, moderatamente allungate (lu/la 4-6), coricate.

Rostro moderatamente più lungo del pronoto (Rlu/Plu 1,12), visto dall'alto un poco allargato nella parte basale e in quella apicale dall'inserzione delle antenne all'apice, visto di lato distintamente e regolarmente arcuato, lievemente ristretto dall'inserzione delle antenne all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo antennale lievemente più grosso e quasi della stessa lunghezza del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto moderatamente trasverso (Pla/Plu 1,36), a lati moderatamente arrotondati fin dalla base, con il punto più largo nel terzo anteriore da dove si restringe nettamente fino all'apice (fig. 31), moderatamente convesso, con punteggiatura piccola e regolare che risparmia una stretta striscia mediana longitudinale, con intervalli fra i punti lisci e lucidi. Lobi oculari distintamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello grande, ben evidente.

Elitre allungate (Elu/Ela 1,57), a lati paralleli nei due terzi anteriori, con margine anteriore moderatamente concavo, con omeri debolmente prominenti in avanti, un poco più larghe del pronoto (Ela/Pla 1,14), moderatamente convesse. Interstrie piane; strie poco visibili fra il rivestimento, formate da punti stretti e profondi, distintamente più strette delle interstrie.

Femori posteriori con grosso e aguzzo dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 15.

♀. Rostro un poco più lungo (Rlu/Plu 1,17). Spiculum ventrale e spermateca come in *P. elongatus* (figg. 21 e 27).

VARIABILITÀ. Le dimensioni variano da 3,5 a 6,0 mm (il lectotypus misura mm 4,1), sebbene gli esemplari sopra i 5 mm siano poco frequenti. Per quanto riguarda il rivestimento,

le fasce e le chiazze elitrali possono essere più o meno numerose; a volte una fascia fra terzo medio e terzo posteriore delle elitre congiunge le squame scure delle prime due interstrie a quelle delle ultime. Il pronoto può avere lati solo debolmente curvilinei e più distintamente divergenti dalla base al terzo apicale. Rlu/Plu ♂ 1,07-1,13, ♀ 1,15-1,20; Pla/Plu 1,32-1,45; Elu/Ela 1,54-1,59; Ela/Pla 1,10-1,16.

CONSIDERAZIONI E NOTE COMPARATIVE. In tutte le collezioni da me esaminate, *P. leucoloma* è sempre stato confuso con *P. elongatus,* insieme al quale sembra trovarsi in alcune località del Senegal, probabilmente su una diversa leguminosa, sebbene non possa escludersi, in base ai dati disponibili (esemplari raccolti da Risbec), che le due specie vivano entrambe sulla stessa pianta. A parte le differenze nella struttura del lobo mediano (in *P. leucoloma* l'endofallo è sprovvisto di scleriti subapicali), *P. leucoloma* è solitamente più piccolo (solo tre esemplari di quelli da me esaminati rientrano nell'ambito di lunghezza di *P. elongatus*) e soprattutto ha pronoto più quadrato esssendo il punto più largo situato nella metà anteriore: inoltre sul disco del pronoto le squame chiare sono molto scarse, mentre in *P. elongatus* solitamente queste risultano numerose.

NOTE BIOLOGICHE. Come risulta dai cartellini degli esemplari raccolti da Risbec, la pianta ospite potrebbe essere *Vigna* sp.(Fabaceae); tuttavia, sempre dalle raccolte di Risbec e visto che le specie di *Pachytychius* sono di rado strettamente monofaghe, non può escludersi che la specie possa svolgere il suo ciclo biologico anche su *Sesbania aegyptiaca, come P. elongatus* (vedi note biologiche di questa specie), oppure nutrirsi dei tessuti di questa pianta solamente allo stato adulto.

DISTRIBUZIONE. Senegal, Nigeria, Alto Volta, Chad.

MATERIALE ESAMINATO. Oltre al lectotypus (vedi sopra), altri 19 esemplari. Senegal: Senegal, Bambey, 15.1.1945, J. Risbec, on *Vigna* (9, BMNH); idem, on *Sesbania aegyptiaca* (2, BMNH). Nigeria: Exped. Mus. G. Frey, Nigeria-Kamerun, Bechyne 1955-56 / Kano, 2.X.55 (1, BMNH); N. Nigeria, Badeggi, Sep. 1910, J. W. Scott-Macfie, 1911-417 (1, BMNH); Bantschi to Lokoja, N. Nigeria, L. M. Bucknill, 1908-229 (1, BMNH). Alto Volta: Africa, Upper Volta, Pabrè near Ouagadougou, R. P. Fernandez (4, CWOB). Chad: Coll. Mus. Congo, Tchad: iles du lac, XI/XII.1957, P. Renaud (1, MACT).

8. **Pachytychius lyali** n. sp. (16, 34)

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con interstrie elitrali, soprattutto nel terzo apicale, con una serie mediana irregolare di squame lievemente sollevate dai tegumenti, visibili guardando le elitre di profilo; con pronoto fortemente trasverso, a lati fortemente arrotondati fin dalla base, con il punto più largo alla metà (fig. 34), distintamente convesso.

LOCALITÀ TIPICA. Zambia, Mwengwa.

SERIE TIPICA. Holotypus ♂: [Zambia] "N. W. Rhodesia: Mwengwa 27°40'E. 13°S, 3.IV.1914, H. C. Dollman / H. C. Dollman Coll. 1919-79" (BMNH) (manca la zampa anteriore sinistra); 1 paratypus ♀ con le stesse indicazioni dell'holotypus eccetto "4.IV.1914" (RCCM).

DESCRIZIONE. ♂ (holotypus). Lunghezza mm 4,4.

Tegumenti nerastri ad eccezione di rostro, antenne e zampe bruno scuri; sul dorso

scarsamente visibili fra il fitto rivestimento formato da squame poco allungate (lu/la 3-4), subellittiche, di due colori ben contrastanti: biancastre e bruno-nerastre. Queste ultime sono più abbondanti sul disco del pronoto e sulla prima interstria elitrale e formano, sempre sulle elitre, numerose strette fasce trasverse, che vanno dalla sutura verso i lati, e alcune piccole chiazze sparse. Le squame sono tutte coricate ad eccezione di alcune lievemente sollevate sulle interstrie elitrali, soprattutto nel terzo apicale; queste ultime sono ben visibili guardando le elitre di profilo e formano una serie mediana irregolare su ogni interstria. Parte ventrale ricoperta fittamente da squame bianco-grigiastre e bruno chiare frammiste fra loro, discretamente allungate (lu/la 5-8), coricate.

Rostro lungo circa quanto il pronoto (Rlu/Plu 0,99), visto dall'alto a lati debolmente convergenti dalla base all'apice, visto di lato moderatamente e regolarmente arcuato, lievemente ristretto dalla base all'apice. Antenne inserite al terzo apicale; primo segmento del funicolo più grosso e circa 1,7 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto fortemente trasverso (Pla/Plu 1,46), a lati fortemente arrotondati fin dalla base, con il punto più largo alla metà (fig. 34), distintamente convesso; con punteggiatura fitta, abbastanza regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari moderatamente pronunciati. Prosterno con margine anteriore fortemente incavato.

Scutello grande, ben evidente.

Elitre allungate (Elu/Ela 1,44), a lati subparalleli nei due terzi anteriori, con margine anteriore moderatamente concavo, con omeri debolmente prominenti in avanti, un poco più larghe del pronoto (Ela/Pla 1,14), moderatamente convesse. Interstrie piane; strie scarsamente visibili fra il rivestimento, formate da punti piccoli e profondi, distintamente più strette delle interstrie.

Femori posteriori con grosso e aguzzo dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 16.

♀ (paratypus). Come il ♂ ad eccezione di rostro discretamente più lungo (Rlu/Plu 1,10). Spiculum ventrale e spermateca come in *P. elongatus* (figg. 21 e 27).

VARIABILITÀ. Il paratypus ha dimensioni maggiori rispetto all'holotypus (mm 4,9).

ETIMOLOGIA. La specie è dedicata a Chris Lyal in segno di ringraziamento per l'indispensabile aiuto fornitomi durante le mie visite al BMNH.

CONSIDERAZIONI E NOTE COMPARATIVE. Specie strettamente affine soprattutto a *P. oberprieleri* e *P. beardae*. Oltre che per la forma del lobo mediano, differisce da entrambi per il pronoto più trasverso e solo poco più largo delle elitre, più convesso sul disco e a lati più arrotondati, e per la serie di squame lievemente sollevate sulle interstrie elitrali. Da *P. beardae* differisce, oltre che per questi particolari, anche per i tegumenti in gran parte nerastri e per le squame del dorso di colori molto più contrastanti fra loro (biancastre e bruno-nerastre invece di grigio-biancastre e bruno chiare).

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Zambia occidentale.

MATERIALE ESAMINATO. Solo gli esemplari della serie tipica (vedi sopra).

9. **Pachytychius beardae** n. sp. (figg. 18, 33)

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con disco del pronoto e prime due interstrie elitrali ricoperti da squame circa dello stesso colore delle altre; con tegumenti completamente bruno-rossastri; con pronoto distintamente trasverso, gradualmente ristretto nel terzo apicale (fig. 33), debolmente convesso.

LOCALITÀ TIPICA. Zambia, Namwala.

SERIE TIPICA. Holotypus ♂: [Zambia] "N. W. Rhodesia: Namwala. 12.VI.1914, H. C. Dollman. / Dry grass-roots nr. R. Kaful / H. C. Dollman Coll. 1919-79" (BMNH); 3 paratypi con le stesse indicazioni dell'holotypus (2 ♀♀ BMNH, 1 ♂ RCCM).

DESCRIZIONE. ♂ (holotypus). Lunghezza mm 4,3.

Tegumenti completamente bruno-rossastri; sul dorso un poco visibili fra il rivestimento formato da squame abbastanza fitte, poco allungate (lu/la 3-5), subellittiche, coricate, di due colori poco contrastanti fra loro: grigio-biancastre e bruno chiare; queste ultime sono più frequenti sul disco del pronoto, mentre sulle elitre formano piccole chiazze sparse. Parte ventrale ricoperta abbastanza fittamente da squame biancastre, moderatamente allungate (lu/la 4-6), coricate.

Rostro lievemente più lungo del pronoto (Rlu/Plu 1,04), visto dall'alto a lati paralleli, visto di lato moderatamente e regolarmente arcuato, lievemente allargato ventralmente alla metà (margine ventrale lievemente sinuoso), un poco ristretto dall'inserzione delle antenne all'apice. Antenne inserite nel terzo apicale; primo segmento del funicolo più grosso e circa 1,8 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

Pronoto distintamente trasverso (Pla/Plu 1,40), a lati moderatamente curvilinei fin dalla base, con il punto più largo alla metà (fig. 33), debolmente convesso, con punteggiatura fitta, abbastanza regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari moderatamente pronunciati. Prosterno con margine anteriore moderatamente incavato.

Scutello grande, ben visibile.

Elitre allungate (Elu/Ela 1,45), a lati subrettilinei nei due terzi anteriori, con margine anteriore debolmente concavo, con omeri debolmente prominenti in avanti, discretamente più larghe del pronoto (Ela/Pla 1,20), moderatamente convesse. Interstrie piane; strie scarsamente evidenti fra il rivestimento, formate da punti piccoli e profondi, distintamente più strette delle interstrie.

Femori posteriori con grosso e aguzzo dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 18.

♀ (paratypus). Rostro un poco più lungo (Rlu/Plu 1,08). Spiculum ventrale e spermateca come in *P. elongatus* (figg. 21 e 27).

VARIABILITÀ. Le dimensioni variano da 4,2 a 4,5 mm. Per il resto non si evidenziano variazioni degne di nota fra gli esemplari della serie tipica. Rlu/Plu ♂ 1,02-1,04, ♀ 1,07-1,08; Pla/Plu 1,39-1,44; Elu/Ela 1,43-1,46; Ela/Pla 1,16-1,21.

ETIMOLOGIA. Dedico con piacere la specie a Jane Beard in segno di ringraziamento per l'aiuto fornitomi nell'esame delle collezioni entomologiche del BMNH.

CONSIDERAZIONI E NOTE COMPARATIVE. Si distingue dalle specie vicine, in primo luogo *P.*

oberprieleri e *P. lyali*, per i tegumenti completamente rossastri sia sul dorso che ventralmente. Oltre che per la forma del lobo mediano, differisce da entrambe queste specie per le squame dorsali di due colori scarsamente contrastanti fra loro, e da *P. lyali* anche per il pronoto meno largo rispetto alle elitre, meno convesso sul disco e a lati meno arrotondati.

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Zambia occidentale.

MATERIALE ESAMINATO. Solo gli esemplari della serie tipica (vedi sopra).

10. **Pachytychius oberprieleri** n. sp. (fig. 17)

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con pronoto distintamente trasverso, a lati moderatamente curvilinei fin dalla base, con il punto più largo alla metà, moderatamente convesso.

LOCALITÀ TIPICA. Sud Africa, Natal, Zululand, Empangeni.

SERIE TIPICA. Holotypus ♂: [Sud Africa] "Empangeni, Zululand, 7.3.67, E. Borman" (SANC). 3 paratypi ♀♀: 1 "South Africa, Natal, Empangeni, 28.44S 31.54E, 17.III.1984, P. Reavell" (RCMC); 1 [Sud Africa] "Zululand, Lr. Umhlatuzi R., 6.vi.1926 / S. Africa, R. E. Turner, Brit. Mus. 1926-277" (BMNH); 1 [Sud Africa, Transvaal] "Plat River, 6-18.4.05, Waterberg Dis., C. Swierstra" (SANC).

DESCRIZIONE. ♂ (holotypus). Lunghezza mm 4,3.

Tegumenti bruno-rossastri ad eccezione della parte laterale del disco del pronoto, delle prime due e delle ultime due interstrie elitrali e dei lati della parte inferiore nerastri; sul dorso un poco visibili fra il rivestimento abbastanza fitto formato da squame poco allungate (lu/la 3-5), subellittiche, coricate, in massima parte bruno-grigiastre, e bruno più scure ricoprenti sulle elitre parte delle prime due interstrie e formanti piccole chiazze sparse sul disco del pronoto. Parte ventrale ricoperta abbastanza fittamente da squame bianco-grigiastre e bruno chiare, discretamente allungate (lu/la 4-7), coricate.

Rostro lievemente più lungo del pronoto (Rlu/Plu 1,07), visto dall'alto a lati subparalleli, visto di lato non ristretto e moderatamente e regolarmente arcuato dalla base all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo un poco più robusto e circa 1,5 volte più lungo del secondo. Fronte un poco più stretta del rostro alla base.

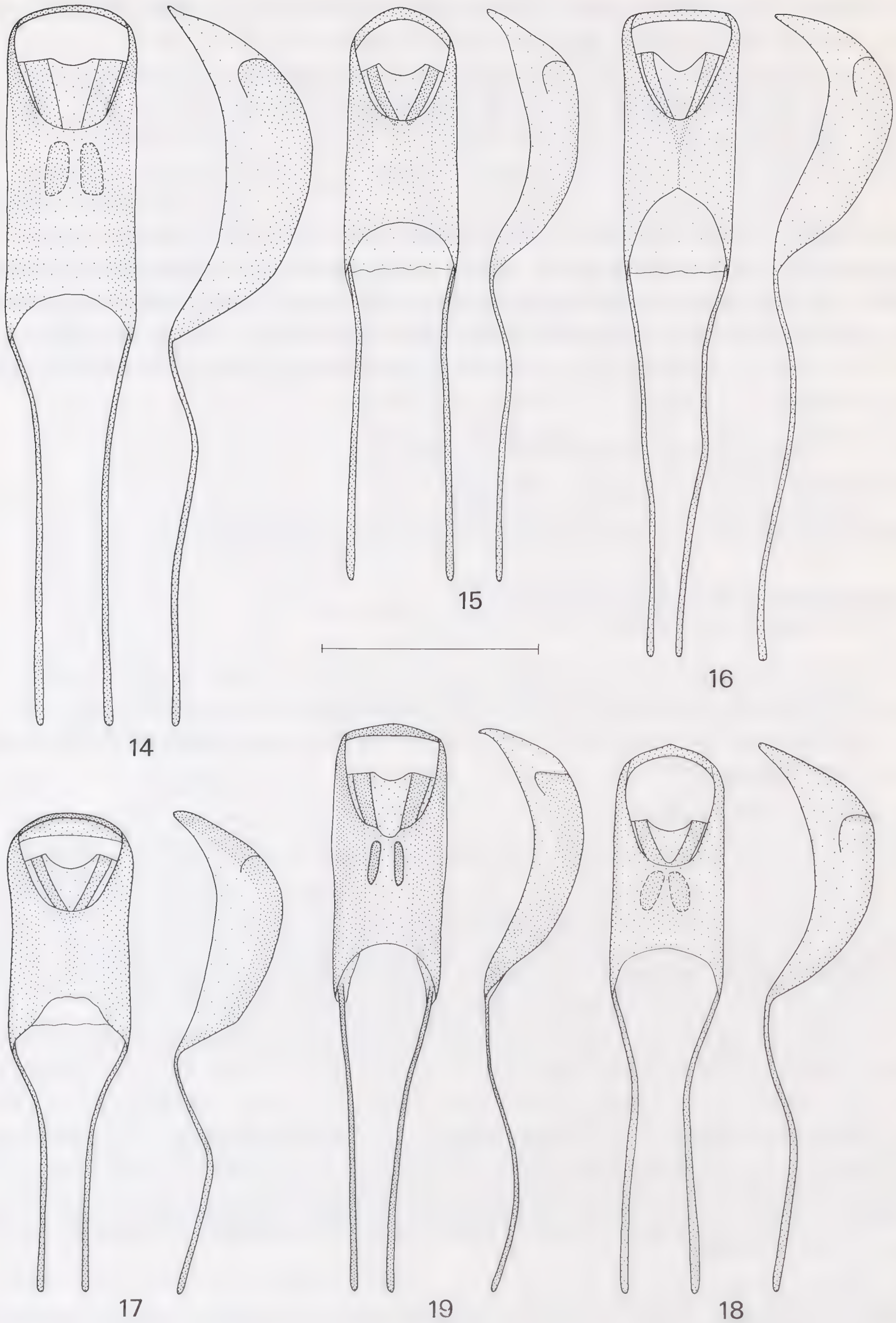
Pronoto distintamente trasverso (Pla/Plu 1,41), a lati moderatamente curvilinei fin dalla base, con il punto più largo alla metà, moderatamente convesso, con punteggiatura fitta, abbastanza regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari distintamente pronunciati. Prosterno con margine anteriore distintamente incavato.

Scutello grande, ben evidente.

Elitre allungate (Elu/Ela 1,47), a lati subparalleli nei tre quarti basali, con margine anteriore debolmente concavo, con omeri debolmente prominenti in avanti, discretamente più larghe del pronoto (Ela/Pla 1,25), moderatamente convesse. Interstrie debolmente convesse; strie poco visibili, con punti poco profondi, distintamente più strette delle interstrie.

Femori posteriori con forte dente aguzzo; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 17.



Figg. 14-19. Edeago di: 14 – *Pachytychius elongatus* (Gyllenhal); 15 – *P. leucoloma* Jekel; 16 – *P. lyali* n. sp.; 17 – *P. oberprieleri* n. sp.; 18 – *P. beardae* n. sp.; 19 – *P. indicus* Tournier. Scala = mm 0,50.

♀ (paratypus). Rostro un poco più lungo (Rlu/Plu 1,11). Spiculum ventrale e spermateca come in *P. elongatus* (figg. 21 e 27).

VARIABILITÀ. La lunghezza è compresa fra 4,0 e 4,8 mm. Non si rilevano altre differenze degne di nota fra gli esemplari della serie tipica. Rlu/Plu ♀ 1,10-1,15; Pla/Plu 1,39-1,42; Elu/Ela 1,45-1,50; Ela/Pla 1,22-1,25.

ETIMOLOGIA. Dedico con piacere la specie a Rolf Oberprieler che mi ha inviato in studio numerosi e interessanti esemplari indispensabili per questa mia revisione.

CONSIDERAZIONI E NOTE COMPARATIVE. Specie strettamente affine a *P. beardae*, dal quale differisce solamente per i tegumenti di protorace e addome bruno nerastri e non rossastri, per le squame scure del rivestimento dorsale più marcatamente contrastate dalle chiare e per la forma del lobo mediano che appare più corto e allargato che in tutte le altre specie ad esso correlate (*P. elongatus*, *P. lyali* e *P. leucoloma*).

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Sud Africa (Natal, Transvaal).

MATERIALE ESAMINATO. Solo gli esemplari della serie tipica (vedi sopra).

11. *Pachytychius indicus* Tournier (fig. 19)

Pachytychius indicus Tournier, 1874: 454, nota.

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con pronoto distintamente trasverso, a lati debolmente arrotondati nella metà basale, più marcatamente nella metà apicale, restringendosi bruscamente in prossimità dell'apice, con il punto più largo un poco oltre la metà, subpiano.

LOCALITÀ TIPICA. India, Bombay.

SERIE TIPICA. Specie descritta su esemplari di Bombay già in precedenza classificati da Jekel con tale nome rimasto però in litteris. Mentre nella collezione Tournier non sono riuscito a trovare esemplari di *P. indicus*, fra il materiale della collezione Bowring (BMNH) ho reperito un ♂ (mancante di zampa media e posteriore sinistra e con i due terzi apicali dell'elitra destra staccata dalla parte restante del corpo) etichettato "Bombay / Boly / *Indicus* (Jekel) Bombay / Bowring 63-47" ben corrispondente alla seppur breve e generica descrizione di Tournier (lectotypus qui designato).

E' tuttavia da notare che in collezione Solari (MSNM) ho trovato due esemplari provenienti dalla collezione Jekel ed etichettati "Bombay, coll. Jekel (scritto da Solari) / nov. sp. *indicus* Jekel / *Pachytychius indicus* (Jek.) Bombay / *indicus* Tourn. typus! ex coll. Jekel (ancora scritto da Solari)". In realtà questi due esemplari non risultano differenti dai comuni *P. elongatus* del Senegal e non li considero pertanto appartenenti alla serie tipica di *P. indicus*. E' probabile che un errore di cartellinatura abbia tratto in inganno Solari. E' interessante, infatti, sottolineare la curiosa coincidenza che *P. elongatus* è stato trovato da più raccoglitori a Bambay, una località del Senegal quasi omonima della città indiana Bombay.

RIDESCRIZIONE. ♂. Lunghezza mm 4,7.

Tegumenti bruno-nerastri ad eccezione di rostro, antenne, tibie e tarsi di colore bruno ferrugineo scuro, sul dorso poco visibili fra il fitto rivestimento formato da squame poco allungate (lu/la 3-5), da subellittiche a sublanceolate, coricate, brune e bianco-giallastre, formanti un disegno marmorizzato sia sul pronoto che sulle elitre dove le scure ricoprono

in massima parte le prime due interstrie. Parte ventrale ricoperta fittamente da squame bianco-grigiastre e bruno chiare, discretamente allungate (lu/la 4-8), coricate.

Rostro moderatamente più lungo del pronoto (Rlu/Plu 1,12), visto dall'alto a lati subparalleli, visto di lato fortemente e regolarmente arcuato, lievemente ristretto dall'inserzione delle antenne all'apice. Antenne inserite nel terzo apicale; primo segmento del funicolo un poco più grosso e circa 1,5 volte più lungo del secondo. Fronte distintamente più stretta del rostro alla base.

Pronoto distintamente trasverso (Pla/Plu 1,42), a lati debolmente arrotondati nella metà basale, più marcatamente nella metà apicale, restringendosi bruscamente in prossimità dell'apice, con il punto più largo un poco oltre la metà, debolmente convesso, con punteggiatura piccola e regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari distintamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello grande, ben evidente.

Elitre allungate (Elu/Ela 1,54), a lati molto debolmente curvilinei nei due terzi anteriori, con margine anteriore moderatamente concavo, con omeri debolmente prominenti anteriormente, moderatamente più larghe del pronoto (Ela/Pla 1,14), moderatamente convesse. Interstrie piane; strie scarsamente visibili fra il rivestimento, formate da punti allungati e profondi, larghe come la metà della larghezza di un'interstria.

Femori posteriori con grosso e aguzzo dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 19.

♀. Rostro moderatamente più lungo (Rlu/ Plu 1,23). Spiculum ventrale e spermateca come in *P. elongatus* (figg. 21 e 27).

VARIABILITÀ. La lunghezza varia da 4,4 (misura anche del lectotypus) a 5,0 mm. Un ♂ da me esaminato presenta una evidente malformazione del rostro, che è abnormemente corto e fortemente ricurvo. Rlu/Plu ♂ 1,08-1,13, ♀ 1,18-1,24; Pla/Plu 1,40-1,45; Elu/Ela 1,52-1,55; Ela/Pla 1,10-1,15.

CONSIDERAZIONI E NOTE COMPARATIVE. Specie estremamente simile a *P. mungonis*, dal quale sembra differire solo per il pronoto più trasverso e rivestito da squame prevalentemente chiare. Queste esili differenze, insieme alla diversa pianta ospite, mi hanno convinto a tenere separate per il momento le due specie. *Pachytychius indicus* risulta decisamente simile anche a *P. elongatus*, dal quale differisce essenzialmente per il pronoto un poco più trasverso e arrotondato.

NOTE BIOLOGICHE. La pianta ospite è verosimilmente *Sesbania aculeata* sulla quale è stato raccolto un adulto, mentre dai suoi semi è uscito un altro esemplare da me esaminato ("daincha" è infatti il nome indiano dato a *S. aculeata*, Lyal com. pers.). E' da sottolineare che sullo stesso genere di leguminose vive in Africa la specie affine *P. elongatus*.

DISTRIBUZIONE. India centro-meridionale.

MATERIALE ESAMINATO. Oltre al lectotypus, altri 6 esemplari. India: Bombay (2, BMNH); Bombay, E. M. Janson (1, BMNH); India, Bombay, Karjat, 29.X.1955, S. K. Dorge, on *Sesbania aculeata*" (1, BMNH); South India, Coimbatore, 28.II.1916 (2, BMNH).

12. *Pachytychius mungonis* Marshall

Pachytychius mungonis Marshall, 1915: 379.

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con pronoto moderatamente trasverso, a lati moderatamente arrotondati, con il punto più largo alla metà, subpiano.

LOCALITÀ TIPICA. India, Madras.

SERIE TIPICA. Specie descritta su esemplari raccolti nell'antico stato coloniale di Madras nell'India meridionale (distretti di Bellary e di Kurnul) senza stabilire l'holotypus. Al BMNH ho esaminato un ♂ etichettato " Type / Madras 1915-116 / XI.11, on green-gram pods, Hadagalli Madras YR / *Pachytychius mungonis* Mshl. Type" (lectotypus qui designato) e due ♀♀ "Cotype / Bellary Dt., Hadagalli, 5-9 Dec. 12 / G. A. K. Marshall Coll., B. M. 1950-255". Tutti i tre esemplari hanno perso parte delle squame del rivestimento, mentre al lectotypus manca la zampa posteriore sinistra.

RIDESCRIZIONE. ♂. Lunghezza mm 4,2.

Tegumenti bruno scuri ad eccezione di antenne e terzo segmento tarsale più chiari e protorace ed interstria suturale elitrale bruno-nerastri, sul dorso poco visibili fra il fitto rivestimento formato da squame poco allungate (lu/la 2-4), da subellittiche a sublanceolate, coricate, bruno scure e bianco-grigiastre. Sul pronoto le squame bruno scure sono decisamente prevalenti, mentre le biancastre formano una stretta striscia longitudinale mediana e chiazzette confuse ai lati e fra lati e linea mediana. Sulle elitre le più scure ricoprono le prime due interstrie e formano numerose chiazzette sparse sulla restante porzione. Parte ventrale ricoperta fittamente da squame biancastre e grigiastre, poco allungate (Elu/Ela 1,5-3), e da alcune squame lunghe setoliformi, biancastre.

Rostro moderatamente più lungo del pronoto (Rlu/Plu 1,12), visto dall'alto a lati subparalleli, visto di lato fortemente e regolarmente arcuato, lievemente ristretto dall'inserzione delle antenne all'apice. Antenne inserite nel terzo apicale; primo segmento del funicolo un poco più grosso e circa 1,5 volte più lungo del secondo. Fronte distintamente più stretta del rostro alla base.

Pronoto moderatamente trasverso (Pla/Plu 1,33), a lati moderatamente arrotondati, con il punto più largo alla metà, debolmente convesso, con punteggiatura piccola e regolare, con intervalli fra i punti stretti e lucidi. Lobi oculari distintamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello grande, ben evidente.

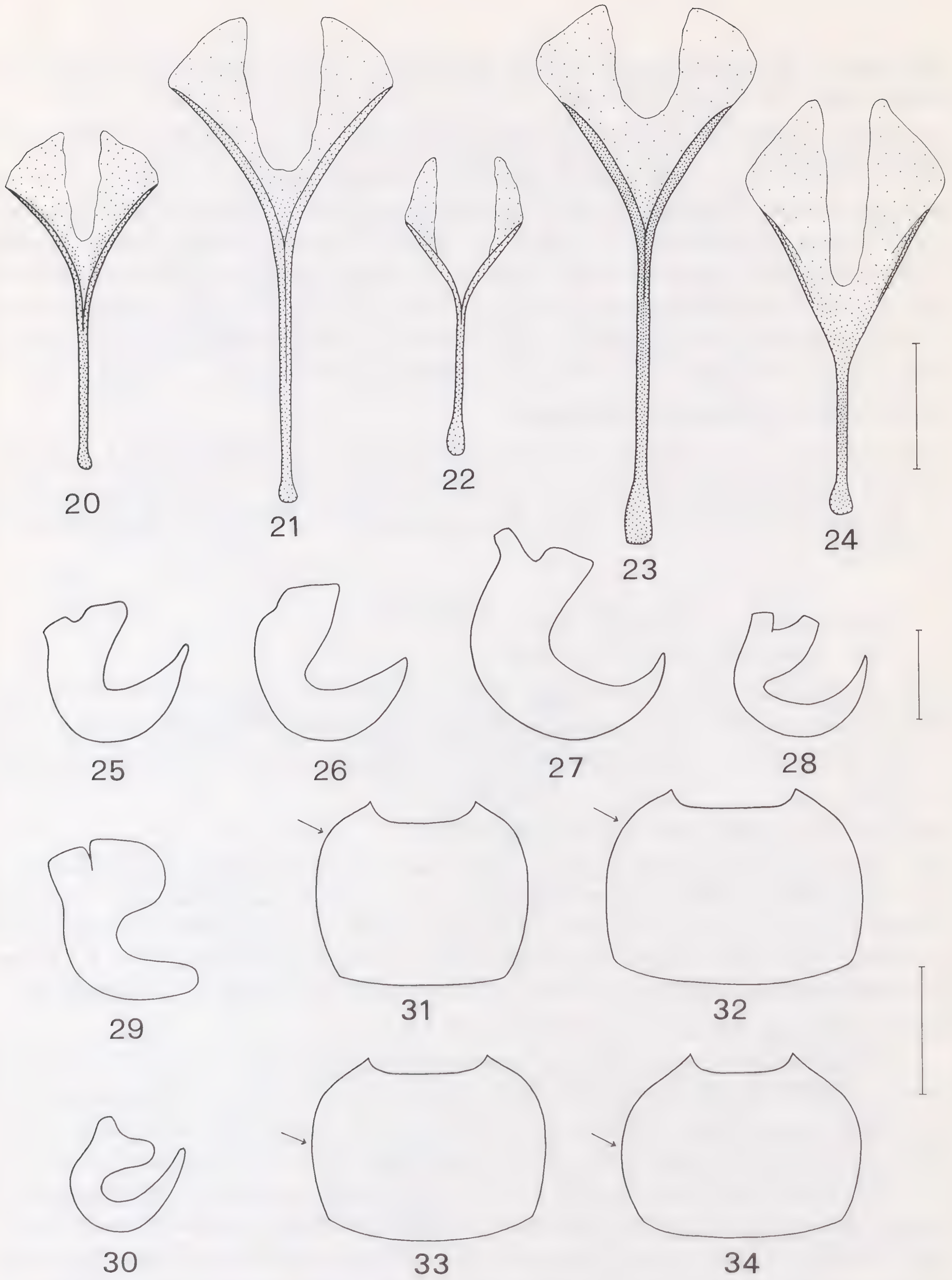
Elitre allungate (Elu/Ela 1,49), a lati molto debolmente curvilinei nei due terzi anteriori, con margine anteriore moderatamente concavo, con omeri debolmente prominenti anteriormente, moderatamente più larghe del pronoto (Ela/Pla 1,17), moderatamente convesse. Interstrie piane; strie scarsamente visibili fra il rivestimento, formate da punti allungati e profondi, larghe come la metà della larghezza dell'interstria.

Femori posteriori con grosso e aguzzo dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in *P. indicus* (fig. 19).

♀. Rostro un poco più lungo (Rlu/Plu 1,18). Spiculum ventrale e spermateca come in *P. elongatus* (figg. 21 e 27).

VARIABILITÀ. La lunghezza varia da 3,9 a 4,8 mm (il lectotypus misura mm 4,3). Sul pronoto le chiazzette di squame chiare, sempre poco numerose, risultano più o meno contra-



Figg. 20-34. Spiculum ventrale (20-24), spermateca (25-30) e pronoto (31-34) di: 20 – *Pachytychius cognatus* n. sp.; 21 – *P. elongatus* (Gyllenhal); 22 – *P. viciae* Marshall; 23 – *P. tuberculatus* n. sp.; 24 – *P. albosparsus* (Fåhraeus); 25 – *P. cognatus* n. sp.; 26 – *P. striatellus* n. sp.; 27 – *P. elongatus* (Gyllenhal); 28 – *P. viciae* Marshall; 29 – *P. tuberculatus* n. sp.; 30 - *P. albosparsus* (Fåhraeus); 31 – *P. leucoloma* Jekel; 32 – *P. elongatus* (Gyllenhal); 33 – *P. beardae* n. sp.; 34 – *P. lyali* n. sp. Scala = mm 0,25 (figg. 20-30); mm 0,50 (figg. 31-34).

state rispetto alle squame scure. Rlu/Plu ♂ 1,09-1,13, ♀ 1,17-1,20; Pla/Plu 1,30-1,35; Elu/Ela 1,46-1,50; Ela/Pla 1,16-1,20.

CONSIDERAZIONI E NOTE COMPARATIVE. Specie strettamente imparentata con *P. indicus*. Per le differenze vedi note comparative di quest'ultima specie e tabella dicotomica.

NOTE BIOLOGICHE. Secondo le osservazioni effettuate da Bainbrigge Fletcher (Marshall, 1915), la specie parassita *Phaseolus mungo* L., spesso causando notevoli danni alle colture, Nei semi di questa leguminosa la ♀ depone le uova dopo aver prodotto un foro nel baccello. Solitamente si trovano tre uova per ogni seme, due ai lati e una nel mezzo. La larva si nutre di 3-4 semi prima di arrivare a maturazione: a questo punto emerge dal baccello e si lascia cadere nel terreno dove avviene la trasformazione a pupa.

DISTRIBUZIONE. India centro-meridionale.

MATERIALE ESAMINATO. Oltre agli esemplari della serie tipica (vedi sopra), altri 4 esemplari. India: Deccan, Ahmadnagar, 1932, J. E. M. Boyd, B. M. 1934-37 (1, BMNH); Godavari Dt., Thanelanka, 22-24 Dec. 12, T.V.R. coll., on Red gram (1, BMNH); S. India, Campbell (2, BMNH).

13. *Pachytychius viciae* Marshall (figg. 4, 13, 22, 28)

Pachytychius viciae Marshall, 1938: 160.

DIAGNOSI. Un *Pachytychius* del gruppo *haematocephalus* con le squame più scure ricoprenti sulle elitre tutt'al più le prime due interstrie e formanti solo qualche confusa chiazza sulle altre interstrie, con pronoto debolmente trasverso, con femori posteriori con piccolo dente.

LOCALITÀ TIPICA. India, Uttar Pradesh, Dehra Dun.

SERIE TIPICA. Specie descritta su esemplari raccolti a Dehra Dun nell'Uttar Pradesh (India settentrionale), dei quali ne ho esaminati nove (BMNH), uno dei quali etichettato "Dehra Dun, U.P., J.C.M. Gardner, 2.V.1936 / on *Vicia sativa* pods / Pres. by Imp. Inst. Ent. B.M. 1936-714 / *Pachytychius viciae* Mshl., Type male / Type" (lectotypus qui designato), mentre gli altri otto (4 ♂♂ e 4 ♀♀) portano identiche indicazioni ad eccezione di un cartellino con scritto "Cotype" (2) o "Paratype" (6).

RIDESCRIZIONE. ♂ (lectotypus). Lunghezza mm 3,0.

Tegumenti bruno-rossastri; sul dorso pressoché completamente nascosti dal fitto rivestimento formato da squame in parte embricate, di forma lanceolata, coricate, biancastre e bruno chiare con evidenti riflessi sericei. Sul pronoto le squame sono larghe (lu/la 1,5-2), mentre sulle interstrie elitrali sono un poco più lunghe (lu/la 2-3) soprattutto alcune che tendono a formare una serie mediana e che sono debolmente sollevate dai tegumenti. Le squame brune ricoprono prevalentemente il disco del pronoto e le prime due interstrie elitrali. Strie elitrali scarsamente visibili, con una serie di strette e lunghe squame biancastre. Anche la parte ventrale ricoperta fittamente da squame biancastre, di forma subellittica o subovale, larghe (lu/la 2-4), in mezzo alle quali sono frammiste sugli ultimi sterniti alcune lunghe squame setoliformi un poco sollevate (lu/la 5-6).

Rostro poco più lungo del pronoto (Rlu/Plu 1,04), visto dall'alto a lati subparalleli, visto di lato moderatamente arcuato, lievemente ristretto dall'inserzione delle antenne all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo un poco

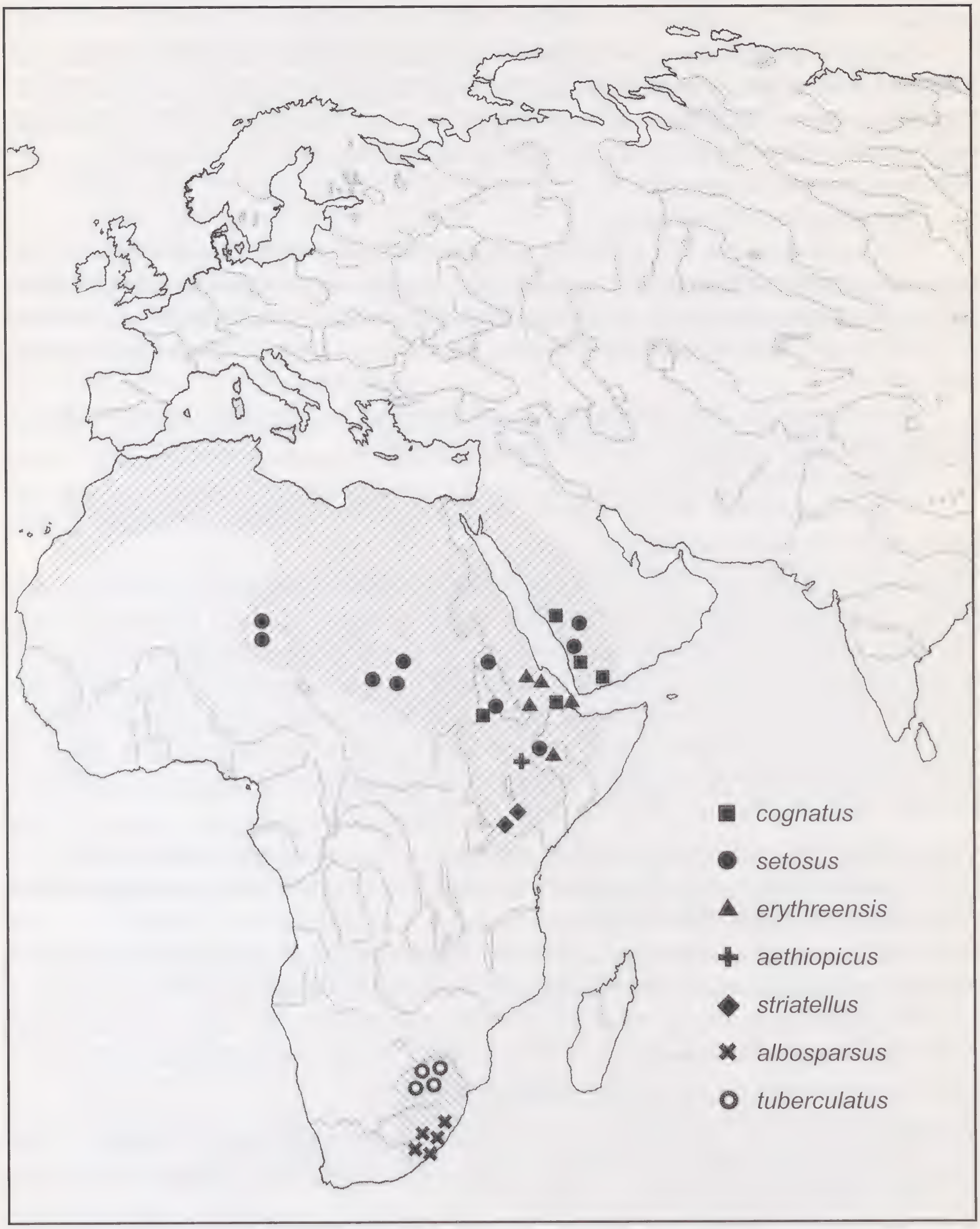


Fig. 35. Areale di diffusione dei gruppi di *P. aridicola* (/////) e di *P. albosparsus* (\\\\\) e località dettagliate di raccolta delle specie afrotropicali.

più grosso e circa 1,5 volte più lungo del secondo. Fronte debolmente più stretta del rostro alla base.

Pronoto debolmente trasverso (Pla/Plu 1,19), a lati un poco curvilinei e divergenti dalla base al terzo apicale dove è situato il punto più largo, debolmente convesso, con punteggiatura piccola e regolare, con intervalli fra i punti stretti e lucidi (visibili solamente negli esemplari mal conservati). Lobi oculari moderatamente pronunciati. Prosterno moderatamente incavato nel mezzo.

Scutello grande, ben evidente.

Elitre allungate (Elu/Ela 1,60), con margine anteriore moderatamente concavo, con omeri non prominenti in avanti e arrotondati, discretamente più larghe del pronoto (Ela/Pla 1,27), moderatamente convesse. Interstrie piane; strie scarsamente visibili perché nascoste dal rivestimento, formate da punti allungati e profondi, apparentemente molto più strette dell'interstria.

Femori posteriori con un piccolo ma distinto dente; terzo segmento tarsale bilobato e moderatamente ma distintamente più largo del secondo.

Edeago come in fig. 13.

♀ (paralectotypus). Rostro moderatamente più lungo (Rlu/Plu 1,10). Spiculum ventrale e spermateca come in figg. 22 e 28.

VARIABILITÀ. La lunghezza varia da 2,6 a 3,2 mm. Per quanto riguarda il rivestimento, sul pronoto le squame più chiare possono essere numerose anche sul disco e non solo ai lati; viceversa, in un esemplare le squame scure prevalgono sulle chiare che formano una stretta stria centrale e due strie per ogni lato. Sulle elitre le squame brune, oltre alle prime due interstrie, possono ricoprire in minima parte anche le altre interstrie; in alcuni esemplari sulle interstrie non è evidente la serie centrale di rade squame un poco sollevate. Infine, il pronoto può presentare lati rettilinei nei due terzi basali. Rlu/Plu ♂ 1,02-1,05, ♀ 1,08-1,13; Pla/Plu 1,15-1,20; Elu/Ela 1,56-1,63; Ela/Pla 1,26-1,32.

CONSIDERAZIONI E NOTE COMPARATIVE. Risulta facilmente distinguibile dalle altre due specie per il momento note del subcontinente indiano soprattutto per le minori dimensioni del corpo e del dente dei femori posteriori.

NOTE BIOLOGICHE. Come riportato sul cartellino degli esemplari della serie tipica, la specie risulta raccolta su legumi di *Vicia sativa L.* che, verosimilmente, costituisce la pianta o una delle piante ospiti. Per quanto riguarda l'esemplare raccolto in Pakistan su melograno (*Punica granata* L., Punicaceae), è probabile che tale pianta sia solo una pianta di rifugio.

DISTRIBUZIONE. India settentrionale, Pakistan orientale.

MATERIALE ESAMINATO. Oltre ai 9 esemplari della serie tipica solo altri 2 esemplari. India: Punjab, Kulu Beas, b. 4000, O. H. Walters, 12.6.1922 (1, BMNH). Pakistan: Phularwan, 11.2.60 / Adult on Pomegranate (1, BMNH).

Gruppo di *Pachytychius albosparsus* (Fåhraeus)

Il gruppo presenta la combinazione dei seguenti caratteri: elitre corte, subovali, con squame in massima parte moderatamente allungate, solitamente di due colori ben contrastanti fra loro, in ogni caso le più scure ricoprenti almeno gran parte delle prime due inter-

strie da dove si dipartono a formare fasce e chiazze più o meno numerose e più o meno lunghe; femori posteriori con grosso dente; lobo mediano a forma di corto tubo.

Il gruppo è per il momento composto solo da due specie dell'Africa meridionale (distribuzione in fig. 35) ed appare filogeneticamente correlato con il gruppo di *P. haematocephalus*, da cui differisce essenzialmente, ma nettamente, per la corta forma elitrale.

14. *Pachytychius albosparsus* (Fåhraeus) (figg. 5, 11, 24, 30)

Tychius albosparsus Fåhraeus, 1871: 249.

Pachytychius albosparsus (Fåhraeus), Caldara, 1989: 55.

DIAGNOSI. Un *Pachytychius* del gruppo omonimo con pronoto appiattito soprattutto verso i lati, che sono carenati, con elitre fortemente convesse e con omeri fortemente prominenti anteriormente.

LOCALITÀ TIPICA. Sud Africa, Caffraria.

SERIE TIPICA. Già in precedenza (Caldara, 1989) avevo esaminato in NHMS tre syntypi, designando come lectotypus un ♂ etichettato "Caffraria / I. Vahlb. / Typus / *albosparsus* Schh." e come paralectotypi due ♀♀ etichettate come il lectotypus ad eccezione di "Paratypus".

RIDESCRIZIONE. ♂. Lunghezza mm 3,5.

Tegumenti neri ad eccezione di apice del rostro, antenne, apice delle tibie e tarsi bruno-rossastri; sul dorso scarsamente visibili fra il fitto rivestimento formato da squame poco allungate (lu/la 3-5), subellittiche, coricate, bianche e nere; le prime sul pronoto formano una fascia longitudinale mediana e due chiazzette laterali basali e due apicali, mentre sulle interstrie elitrali sono raggruppate in numerose chiazze che in parte formano fasce trasversali interrotte (dato che tali squame non ricoprono le strie). Strie ben visibili, con sottili squame biancastre poco evidenti. Parte ventrale ricoperta da squame bianche e nere (queste ultime ricoprenti gli sterniti III-V e i lati degli sterniti I e II), moderatamente allungate (lu/la 4-6), da coricate a subcoricate.

Rostro moderatamente più lungo del pronoto (Rlu/Plu 1,17), visto dall'alto lievemente ristretto nel terzo basale, indi a lati paralleli che si allargano un poco in prossimità dell'apice, visto di lato fortemente arcuato soprattutto nel terzo basale, pressoché dello stesso calibro dalla base all'apice. Antenne inserite nel terzo apicale; primo segmento del funicolo lievemente più robusto e circa 1,2 volte più lungo del secondo. Fronte un poco più larga del rostro alla base.

Pronoto fortemente trasverso (Pla/Plu 1,52), a lati distintamente carenati e discretamente arrotondati alla base e all'apice, più debolmente nella parte centrale, piano ai lati e sul disco nella metà basale, lievemente convesso sul disco nella metà apicale, con punti fitti e profondi in parte riuniti a formare strie soprattutto lateralmente, con intervalli fra i punti stretti e moderatamente lucidi. Lobi oculari debolmente pronunciati. Prosterno debolmente incavato nel mezzo.

Scutello piccolo, scarsamente visibile perché posto su un piano inferiore rispetto a quello del dorso delle elitre.

Elitre corte (Elu/Ela 1,17), subovali, a lati arrotondati fin dalla base, con la maggior larghezza un poco oltre la metà, con margine anteriore distintamente concavo, con omeri fortemente prominenti anteriormente, poco più larghe del pronoto (Ela/Pla 1,09), forte-

mente convesse. Interstrie moderatamente convesse; strie molto evidenti, formate da punti molto profondi, larghe circa la metà della larghezza dell'interstria.

Femori posteriori con un forte dente aguzzo; terzo segmento tarsale fortemente bilobato e distintamente più largo del secondo.

Edeago come in fig. 11.

♀. Rostro lievemente più lungo (Rlu/Plu 1,23). Spiculum ventrale e spermateca come in figg. 24 e 30.

VARIABILITÀ. La lunghezza è compresa fra 2,7 e 3,7 mm. La variabilità maggiore riguarda il disegno della parte dorsale, dove le squame bianche possono ridursi a formare sul pronoto solamente una chiazza mediana nella metà basale, mentre sulle elitre possono ricoprire soltanto gli omeri, la parte basale di terza e quinta interstria e formare una fascia trasversale mediana che va dalla seconda all'ottava interstria; in casi estremi esse ricoprono solo gli omeri e base della terza interstria. Raramente il pronoto ha lati meno fortemente carenati, più curvilinei e lievemente convessi e la maggior larghezza nel terzo basale. Pla/Plu 1,44-1,54; Elu/Ela 1,14-1,20. Ela/Pla 1,08-1,13.

CONSIDERAZIONI E NOTE COMPARATIVE. Il tipo di rivestimento e l'habitus rendono questa specie molto caratteristica e inconfondibile dalle altre specie del genere finora note, compreso *P. tuberculatus* l'unica che mostra con essa maggiori affinità morfologiche.

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Sud Africa (Natal).

MATERIALE ESAMINATO. Oltre agli esemplari della serie tipica (vedi sopra), altri 8 esemplari. Sud Africa: Natal (1, USNM); Natal, D'Urban [sic] (1, SAMC); Natal, Estcourt (1, SAMC); Umgubada, Sicoast, XI.03 (1, SANC); South Africa, Ntl., Dlinza For. Eshowe, 28.54S 31.28E, 12.i.1984, P. E. Reavell (1, SANC); South Africa, Natal, Vernon Crookes Nat. Res., Umzinto, 30.17S 30.37E, 443 m, 25-26.III.1985, G. L. Prinsloo (1, SANC); con indicazioni indecifrabili (2, SAMC); senza indicazioni (1, SANC).

15. **Pachytychius tuberculatus** n. sp. (figg. 6, 12, 23, 29)

DIAGNOSI. Un *Pachytychius* del gruppo *albosparsus* con protuberanza elitrale a livello della declività posteriore, in corrispondenza dell'apice di quarta, quinta, sesta e settima interstria, con pronoto distintamente convesso.

LOCALITÀ TIPICA. Sud Africa, Transvaal, Vienna Game Farm Haedspruit.

SERIE TIPICA. Holotypus ♂ "South Africa, Tvl., Vienna Game Farm Haedspruit, 24.17S 30.58E, 500 m, 17-18.i.1991, R. G. Oberprieler" (SANC). 23 paratypi: 4 ♂♂ e 11 ♀♀ con gli stessi dati dell'holotypus (9, SANC; 6, RCCM); 1 ♀ "RSA: E. Transvaal 15 km NE Klaserie, Guernsey Farm, 18-31.XII.85, S. & J. Peck, woodland, yellow chembaitpantraps" (SANC); 1 ♂ e 1 ♀ "RSA: Transvaal, 15 km NW Klaserie, Guernsey Farm, 19-31.XII.85, S. & J. Peck, woodland evening carnetting" (SANC); 1 ♀ idem eccetto "woodland malaise-FIT's" (SANC); 1 ♀ [Transvaal] "Skukuza NKW. (naby Duba), 15-3-1960, HAD v Schalkwyk" (SANC); 1 ♀ "Mozambique, F. Muir / Sharp Coll. 1905-313" (BMNH); 2 ♂♂ [Mozambico] "Lourenço Marques, F. Muir, 10.VIII.1900 / Sharp Coll. 1905-313" (BMNH).

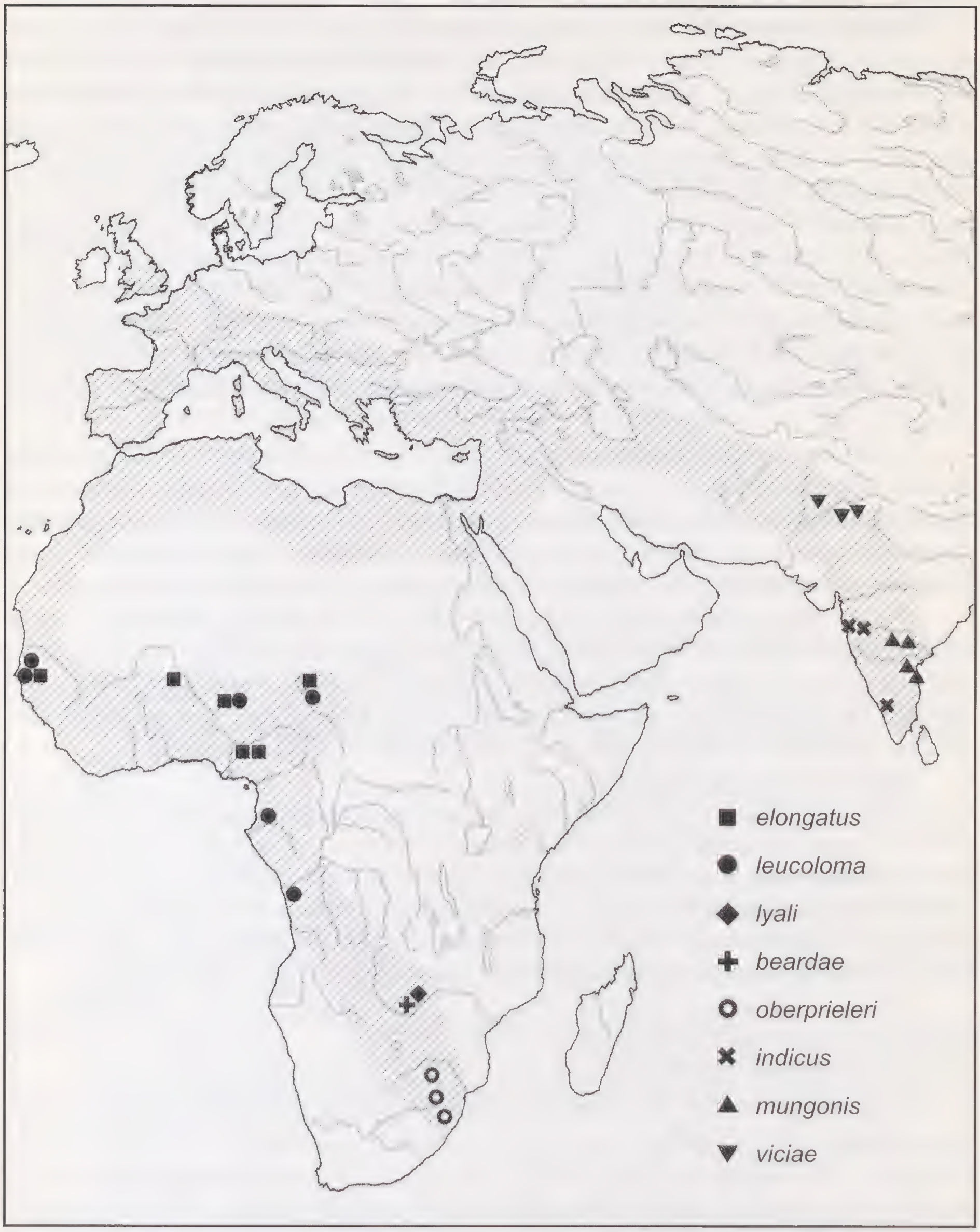


Fig. 36. Areale di diffusione del gruppo di *P. haematocephalus* e località dettagliate di raccolta delle specie afrotropicali e orientali.

DESCRIZIONE. ♂ (holotypus). Lunghezza mm 3,2.

Tegumenti neri ad eccezione di rostro, antenne e zampe bruni; sul dorso un poco visibili fra il rivestimento formato da squame abbastanza fitte. Sul pronoto le squame sono poco allungate (lu/la 3-5), subellittiche, da coricate a lievemente sollevate, prevalentemente di colore scuro, nerastre, e in piccola parte chiare, bruno chiare e biancastre, formanti due chiazze ben distinte ai lati nella metà basale. Anche sulle elitre sono presenti squame coricate di analoga forma e colore: le nerastre ricoprono prevalentemente le prime due interstrie nella metà basale e formano una fascia trasversa che va dalla sutura ai lati fra terzo medio e terzo apicale (a T capovolta), in piccolo numero sono inoltre frammiste alle brune e alle biancastre sulle restanti parti formando un disegno maculato. Sulle interstrie elitrali sono inoltre presenti alcune squame più lunghe (lu/la 5-7), suberette, ben visibili guardando l'esemplare di lato e disposte grosso modo in un'unica serie irregolare. Parte ventrale ricoperta abbastanza fittamente da squame moderatamente allungate (lu/la 5-8), bianche e bruno chiare.

Rostro lungo circa come il pronoto (Rlu/Plu 0,98), visto dorsalmente a lati pressoché paralleli dalla base all'apice, visto di lato distintamente ricurvo alla base poi debolmente arcuato fino all'apice, molto debolmente e gradualmente ristretto dalla base all'apice. Antenne inserite fra terzo medio e terzo apicale; primo segmento del funicolo un poco più robusto e circa 1,5 volte più lungo del secondo. Fronte un poco più larga del rostro alla base.

Pronoto distintamente trasverso (Pla/Plu 1,43), a lati fortemente arrotondati, con la maggior larghezza alla metà, distintamente convesso soprattutto sul disco, con punti poco profondi, disposti in modo moderatamente irregolare e in parte riuniti in corte strie, con intervalli fra i punti lucidi e più stretti dei punti stessi. Lobi oculari moderatamente pronunciati. Prosterno con margine anteriore distintamente incavato nel mezzo.

Scutello piccolo ma ben distinto.

Elitre corte (Elu/Ela 1,19), subovali, a lati debolmente curvilinei, con la massima larghezza nel terzo apicale da dove si restringono bruscamente, con margine anteriore debolmente concavo, con omeri debolmente prominenti in avanti, moderatamente convesse. Interstrie moderatamente convesse, con quarta, quinta, sesta e settima interstria alla loro congiunzione apicale distintamente convesse e formanti un robusto tubercolo; strie ben evidenti, formate da punti profondi, larghe circa la metà della larghezza dell'interstria.

Femori posteriori con un robusto ed aguzzo dente; terzo segmento tarsale bilobato e distintamente più largo del secondo.

Edeago come in fig. 18.

♀ (paratypus). Rostro lievemente più lungo (Rlu/Plu 1,03). Spiculum ventrale e spermateca come in figg. 23 e 29.

VARIABILITÀ. Le dimensioni variano da 2,3 a 4,0 mm. Il disegno elitrale appare più o meno maculato con le squame chiare a volte molto numerose sulla metà basale della terza interstria, ai lati e nella metà apicale. Le squame dorsali più scure possono essere brune invece che nerastre. Il tubercolo elitrale può essere a volte debole, ma in ogni caso evidente. Rlu/Plu ♂ 0,95-0,99, ♀ 1,01-1,06; Pla/Plu 1,36-1,45; Elu/Ela 1,18-1,23; Ela/Pla 1,12-1,17.

ETIMOLOGIA. L'aggettivo latino sottolinea la caratteristica principale della specie e cioé la presenza di robusto tubercolo nella parte antideclive delle elitre.

CONSIDERAZIONI E NOTE COMPARATIVE. La presenza di robusto tubercolo alla confluenza fra quarta e settima interstria è un carattere non posseduto da nessun'altra specie del genere e rende pertanto inconfondibile il taxon.

NOTE BIOLOGICHE. Non si possiedono dati a riguardo.

DISTRIBUZIONE. Sud Africa (Transvaal), Mozambico.

MATERIALE ESAMINATO. Solo gli esemplari della serie tipica (vedi sopra).

RINGRAZIAMENTI

Un sentito ringraziamento per l'invio di materiale va a tutti i curatori dei Musei e Istituti nominati nel paragrafo "Acronimi". Ringrazio inoltre Miguel Angel Alonso-Zarazaga (Madrid), Enzo Colonnelli (Roma), Carlo Giusto (Genova), Massimo Meregalli (Torino) e Carlo Pesarini (Milano) per alcuni preziosi suggerimenti fornitimi e Valter Fogato (Milano) per l'aiuto nella stesura delle cartine di distribuzione e per le eccellenti fotografie che arricchiscono il testo.

BIBLIOGRAFIA

CALDARA R., 1978 - Revisione dei *Pachytychius* paleartici (Coleoptera Curculionidae). Memorie della Società entomologica italiana, 56: 131-216.

CALDARA R., 1984 - Addenda alla revisione dei *Pachytychius* paleartici (Coleoptera Curculionidae). Bollettino della Società entomologica italiana, 116: 27-28.

CALDARA R., 1988 - *Pachytychius behnei*, nuova specie dell'Asia Centrale (Coleoptera Curculionidae). Bollettino della Società entomologica italiana, 119: 152- 154.

CALDARA R., 1989 - Revisione tassonomica dei *Tychius* della Regione Etiopica (Coleoptera Curculionidae). Atti della Società italiana di Scienze naturali e del Museo civico di Storia naturale di Milano, 130: 5-56.

DESBROCHERS DES LOGES J., 1894 – Observations sur les curculionides appartenant au genre *Procas* et aux genres voisins et description d'un genre nouveau de la même section. Le Frelon, 3: 80-84.

FÅHRAEUS O. I. VON, 1871 - Coleoptera Caffrariae, annis 1838-1845 a J. A. Wahlberg collecta (Curculionides). Öfversigt af Kongliga Vetenskaps-Akademiens Förhandlingar, 28: 197-291.

GONZÁLEZ M., 1968 - Contribución al conocimiento de los curculiónidos del Mediterráneo occidental. Vsecondo. Los *Pachytychius* ibéricos. Publicaciones del Instituto de Biologia aplicada, 45: 107-127.

GYLLENHAL L., [1835] - In: C. J. Schönherr. Genera et species curculionidum, cum synonymia hujus familiae. Species novae aut hactenus minus cognitae, descriptionibus a Dom. Leonardo Gyllenhal, C. H. Boheman, et entomologis alsecondos illustratae – Tomus tertius, pars prima. Roret, Paris; Fleischer, Lipsiae, [VI] + pp. 1-505.

HUSTACHE A., 1923 - Curculionides nouveaux de l'Afrique tropicale. Annales de la Société linnéenne de Lyon, 69: 17-26.

HUSTACHE A., 1932 - Curculionides nouveaux de l'Afrique équatoriale (deuxième partie). Sbornik entomologikého oddeleni národního Musea v Praze, 10: 28-109.

JEKEL M. H., 1861 - Tentamenta Entomologica. Journal of Entomology, 1: 263-274.

KUSCHEL, G. 1995 - A phylogenetic classification of Curculionoidea to families and subfamilies. Memoirs of the entomological Society of Washington, 14: 5-33.

MARSHALL G. A. K., 1915 - Some injurious Indian weevils (Curculionidae). Bulletin of entomological Research, 5: 377-380.

MARSHALL G. A. K., 1938 - New Indian Curculionidae (Col.). Indian Forest Records, 3: 159-185.
MARSHALL G. A. K., 1950 - Contribution a l'étude de l'Aïr (Mission L. Chopard et A. Villiers). Coléoptères Curculionidae. Memoires de l'Institut français d'Afrique noire, 10: 207-211.
RISBEC J., 1947 - Notes sur la reproduction de *Pachytychius elongatus* Gyll. (Col. Curculionidae). Bulletin de la Société entomologique de France, 52: 61-62.
THOMPSON R. T., 1992 - Observations on the morphology and classification of weevils (Coleoptera, Curculionoidea) with a key to major groups. Journal of Natural History, 26: 835-891.
TOURNIER H., 1874 - Observations sur les espèces européennes et circumeuropéennes de la tribu des Tychiides. Annales de la Société entomologique de France, (5) 3: 449-522.
TOURNIER H., 1874a - Matériaux pour servir á la monographie de la tribu des Erirhinides. Annales de la Société entomologique de Belgique, 18: 63-116.
VOSS E., 1962 - Curculioniden des Roten Meeres. Entomologische Blätter, 58: 190-202.

Indirizzo dell'Autore:
R. Caldara, Via Lorenteggio 37, I-20146 Milano, Italia.

ISTRUZIONI PER GLI AUTORI

La Società Entomologica Italiana pubblica di norma annualmente tre fascicoli del *Bollettino* e un volume delle *Memorie*. Ogni pubblicazione scientifica inerente gli Arthropoda, con particolare riferimento alle forme terrestri e d'acqua dolce, è suscettibile di pubblicazione; quest'ultima è riservata in prima istanza ai membri della Società, possono essere altresì accolti lavori di non soci, su parere favorevole della Redazione, se giudicati di particolare interesse. I manoscritti devono essere inviati alla Redazione della Società Entomologica Italiana, c/o Istituto di Entomologia Agraria, Via Celoria 2, 20133 Milano. I lavori accettati vengono pubblicati senza addebito di spese, eccezione fatta per le tavole a colori; gli autori riceveranno 100 estratti gratuiti (50 estratti per le "Recensioni" e le "Segnalazioni Faunistiche"). E' ammessa la richiesta di un numero maggiore di estratti; le spese relative alle copie eccedenti le 100 (o 50) gratuite saranno a carico dell'autore.

Manoscritti

I manoscritti devono avere testi concisi e chiari, scritti in inglese, italiano, francese, tedesco o spagnolo; devono essere inviati in triplice copia (con figure non originali). Devono essere dattiloscritti o stampati con spaziatura doppia su un solo lato di fogli in formato UNI-A4 con margini di almeno 2,5 cm. Le pagine devono essere numerate consecutivamente, incluse quelle della bibliografia. I lavori devono seguire il seguente schema: autore/i, titolo, due riassunti (vedi oltre), key words, testo, ringraziamenti, bibliografia, indirizzo/i dell'autore/i, didascalie delle figure, tavole. I simboli $, # e £ possono essere utilizzati per indicare rispettivamente ♂, ♀ e ☿.

I manoscritti non conformi alle norme qui riportate saranno restituiti all'autore prima del loro esame da parte dei Referees.

In questa prima fase di analisi dei lavori da parte della Redazione e dei Referees non deve essere inviata alcuna copia su supporto magnetico per computer. La Redazione notificherà l'accettazione, il rifiuto o la necessità di revisione entro 4 mesi, rinviando eventualmente all'autore una copia del lavoro con le correzioni redazionali e le osservazioni dei Referees. Dopo l'accettazione e la revisione del lavoro, l'autore ne dovrà inviare una sola copia nella versione definitiva, con le tavole originali e, possibilmente, una copia del testo su dischetto da $3^1/_2$", utilizzando un programma di videoscrittura fra quelli ad ampia diffusione (indifferentemente in ambiente DOS, Windows o Macintosh). I costi per eventuali successive modifiche ai testi o alle figure saranno addebitati all'autore.

Stile

Il titolo deve essere conciso, informativo del contenuto dell'articolo e deve menzionare la famiglia trattata e il taxon più elevato, quando opportuno, non intercalati da alcun segno di punteggiatura. Il numero di serie nell'ambito dei lavori di un autore deve essere pubblicato come nota a piè di pagina.

L'autore deve adeguarsi alle disposizioni dell'*International Code of Zoological Nomenclature* (ultima edizione) e alle opinioni pubblicate dalla International Commission on Zoological Nomenclature. I nomi di tutti i taxa devono essere seguiti dal nome non abbreviato dell'autore e dall'anno di descrizione quando sono usati per la prima volta nel testo, ad es.: *Cryptocephalus* (*Burlinius*) *labiatus* (Linné, 1761). Le descrizioni di nuove specie devono riportare, preferibilmente nell'ordine, una breve diagnosi, la località tipica del taxon, i dati completi del materiale della serie tipica (località, data, raccoglitore, numero degli esemplari, collezione in cui sono conservati), descrizione, note comparative, eventuali altri dati. I titoli dei capitoli devono essere allineati al margine sinistro e occupare da soli una riga; i titoli dei paragrafi devono essere allineati al margine sinistro, seguiti da un punto e dal testo, sulla stessa riga.

Indipendentemente dalla lingua utilizzata per il testo, subito dopo il titolo devono essere scritti un riassunto in italiano (eventualmente realizzato dalla Redazione qualora richiesto da un autore straniero) e un "abstract" in inglese, comprendente anche la traduzione del titolo qualora il testo sia in una lingua differente.

Gli autori non di lingua madre inglese che desiderino pubblicare in questa lingua devono fare controllare l'esattezza grammaticale e sintattica a un entomologo di lingua madre, il quale deve essere menzionato nei ringraziamenti. La Società può eventualmente suggerire il nome di un traduttore a cui i soci possono affidare a proprie spese il controllo dei propri testi.

ILLUSTRAZIONI

I grafici, i disegni e le fotografie devono essere citati come figure, sia nel testo sia nelle didascalie (es.: fig. 3; figg. 3-6); possono essere indicati a matita sul testo i punti in cui si preferirebbe inserire le figure. Disegni e fotografie a colori saranno accettati previo accordo con la Redazione e a spese degli autori. Le singole figure devono essere numerate sequenzialmente con numeri arabi; la dimensione dei caratteri utilizzati deve essere tale da sopportare l'eventuale riduzione necessaria. Le dimensioni delle tavole non devono eccedere il rapporto altezza/larghezza di 3/2. Nelle raffigurazioni di animali o parti di essi deve essere riportata la scala con indicazione della misura (es.: 0,3 mm). Si raccomanda di indicare l'esemplare o la provenienza dell'esemplare raffigurato. Devono essere riportati sul retro delle tavole il nome dell'autore e il titolo del lavoro cui si riferiscono.

Le didascalie delle figure e delle tavole di figure devono essere redatte secondo gli schemi degli esempi seguenti:

Fig. 1. *Parabathyscia (P.) fiorii* Capra, holotypus ♂: habitus.

Figg. 2-5. *Parabathyscia (P.) fiorii* Capra (♂; Firenze: Fiesole): 2 - edeago in visione dorsale; 3 - idem, in visione laterale; 4 - apice del paramero destro; 5 - antenna.

BIBLIOGRAFIA

Nel testo, i riferimenti bibliografici devono essere citati, a seconda dei casi, come negli esempi seguenti: Binaghi (1951); (Binaghi, 1951); (Binaghi, 1951a, 1951b; Capra, 1958); (Binaghi, 1951: 18). Il nome di un coautore va unito con un "&" a quello del primo autore; nel caso in cui siano presenti tre o più autori va indicato il nome del primo autore seguito da "et al.," e dall'anno.

Nella bibliografia devono esseri riportati esclusivamente i dati di tutte le pubblicazioni citate nel testo, secondo i modelli seguenti:

BINAGHI G., 1974 - Il *Troglophloeus siculus* Rey nel Lazio. Ecologia e nuovi caratteri diagnostici (Coleoptera Staphylinidae). Bollettino della Società entomologica italiana, 106 (3-4): 49-53.

BINAGHI G., 1951 - Coleotteri d'Italia. Vita, ambienti, utilità, danni, mezzi di lotta. Briano, Genova, 210 pp.

MOHR K. H., 1966 - Familie: Chrysomelidae, pp. 95-299. In: H. Freude, K. W. Harde & G. A. Lohse (eds.). Die Käfer Mitteleuropas, 9 (88), Goecke & Evers, Krefeld.

CICERONI A., PUTHZ V. & ZANETTI A., 1995 - Coleoptera Polyphaga III (Staphylinidae), 65 pp. In: A. Minelli, S. Ruffo & S. La Posta (eds.). Checklist delle specie della fauna italiana, 48, Calderini, Bologna.

I riferimenti ai periodici devono essere riportati per esteso (come negli esempi riportati). I titoli di pubblicazioni scritte originariamente in lingue con caratteri differenti da quelli latini devono essere traslitterati o, meglio, tradotti in inglese con l'indicazione, tra parentesi, della lingua originale.

SEGNALAZIONI FAUNISTICHE ITALIANE

Vengono accettate delle note brevi riguardanti reperti di Arthropoda della fauna italiana che rivestano particolare interesse per la novità dell'informazione sulla geonemia o l'ecologia delle specie trattate. Le segnalazioni vanno redatte sinteticamente riportando nell'ordine: - Specie (Ordine Famiglia); - Riferimento nomenclatoriale: la pubblicazione in base alla quale viene interpretato il taxon ed eventualmente i sinonimi di uso corrente; - Inquadramento: il motivo di interesse della segnalazione; - Reperti: località, data, raccoglitore, collezione in cui sono conservati gli esemplari, eventuali notizie sull'habitat; - Osservazioni: distribuzione generale del taxon mediante l'indicazione della categoria corologica di appartenenza, distribuzione segnalata in Italia con relativi riferimenti bibliografici abbreviati, ulteriori osservazioni complementari; - Autore e indirizzo.

SOCIETÀ ENTOMOLOGICA ITALIANA

Sede in Genova, via Brigata Liguria, 9 presso il Museo Civico di Storia Naturale

■ **QUOTE ASSOCIATIVE PER IL 2000.**

Soci Ordinari dei paesi UE L 50.000,

Soci Ordinari dei paesi extra UE L 75.000,

Soci Studenti L 25.000.

Se si tratta della prima iscrizione bisogna aggiungere L 10.000.

La quota deve essere versata entro il primo bimestre dell'anno; la quota versata oltre tale periodo deve essere aumentata del 50%.

■ **VERSAMENTI** esclusivamente con Conto Corrente Postale N. 15277163 intestato a: Società Entomologica Italiana, via Brigata Liguria 9, 16121 Genova.

■ **SEGRETERIA** Società Entomologica Italiana, Via Brigata Liguria 9, 16121 Genova.

■ **HOME PAGE:** http://www.unige.it/zoologia/socentomit

LA PRESENTE PUBBLICAZIONE, FUORI COMMERCIO, NON È IN VENDITA

E VIENE DISTRIBUITA GRATUITAMENTE SOLO AI SOCI IN REGOLA CON LA QUOTA SOCIALE.

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 01058 5123

INDICE

vol. 78 (1)

- Mazzoglio P. J.
  FELICE MUSSO (27.II.1914 - 13.VII.1999) **3**
- Toledano L.
  SYSTEMATIC NOTES ON THE PALAEARCTIC BEMBIDIINI, WITH PARTICULAR REFERENCE TO THE FAUNA OF CHINA (Coleoptera Carabidae) **5**
- Sassi D. & Kismali S.
  THE CRYPTOCEPHALINAE OF TURKEY, WITH INFORMATIONS ON THEIR DISTRIBUTION AND ECOLOGY (Coleoptera Chrysomelidae) **71**
- Caldara R.
  REVISIONE DEI *PACHYTYCHIUS* DELLE REGIONI AFROTROPICALE E ORIENTALE (Coleoptera Curculionidae) **131**
- ISTRUZIONI PER GLI AUTORI **167**

REGISTRATO PRESSO IL TRIBUNALE DI GENOVA AL N. 76 (4 LUGLIO 1949)
Prof. Cesare Conci - Direttore Responsabile
Spedizione in Abbonamento Postale 50% - Quadrimestrale
Stampato da PolyGrafika, Via Ciro Menotti 11/D, 20129 Milano

SOCIETÀ ENTOMOLOGICA ITALIANA via Brigata Liguria 9 Genova